California Regional Water Quality Control Board

Los Angeles Region

Recipient of the 2001 *Environmental Leadership Award* from Keep California Beautiful

Linda S. Adams
Agency Secretary

320 W. 4th Street, Suite 200, Los Angeles, California 90013
Phone (213) 576-6600 FAX (213) 576-6640 - Internet Address: http://www.waterboards.ca.gov/losangeles

Arnold Schwarzenegger
Governor

April 28, 2009

Mr. Thomas D. Gallacher, Director
SSFL – Safety, Health & Environmental Affairs
The Boeing Company
Santa Susana Field Laboratory
5800 Woolsey Canyon Road
Canoga Park, CA 91304-1148

Dear Mr. Gallacher:

RESPONSE TO COMMENTS AND REVISED TENTATIVE WASTE DISCHARGE REQUIREMENTS (WDR), FACT SHEET, MONITORING AND REPORTING PROGRAM (MRP) AND CEASE AND DESIST ORDER (CDO) – THE BOEING COMPANY, SANTA SUSANA FIELD LABORATORY, CANOGA PARK, CA, NPDES NO. CA0001309, CI NO. 6027

Our letter dated April 6, 2009, transmitted the revised-tentative Order for renewal of your permit to discharge wastes under the National Pollutant Discharge Elimination System (NPDES). April 15, 2009, was the deadline for comments on the proposed Orders. Attached hereto is a Response to Comments Table, and revised versions of the MRP, Fact Sheet and the CDO. The modifications incorporated are listed below:

Cover Letter and Report of Waste Discharge

1. The Report of Waste Discharge has been scanned and the revised document will be posted on the website.
2. The interested parties list has been updated to include Nicole Doner with Ventura County Planning Division and Rick Viergutz, Water and Environmental Resources Section, Ventura County Watershed Protection.

Revised Tentative Fact Sheet

1. A Finding was added to Page 46, Paragraph 4, of the Fact Sheet which documents the requirements set forth for the Expert Panel.
2. Page 47, Paragraph 2 of the Fact Sheet, statement 1 was edited to read "Following the adoption of the NPDES permit on November 1, 2007, Order R4-2007-0055, and the Cease and Desist Order (R4-2007-0056), the Discharger assembled a panel with input from the Regional Board staff and water resources-focused environmental organizations to review site conditions, modeled flow, contaminants of concern and evaluate the BMPs capable of providing the required treatment to meet the final effluent limitations."

3. The results of the reasonable potential analysis were also included as an attachment to the Fact Sheet.

Monitoring and Reporting Program

1. The MRP was updated to incorporate composite sampling for constituents where that is appropriate. The changes begin on Page T-6 and continue through Page T-11.
2. The MRP, Page T-10, Item D., has been updated to reflect that Outfalls 012 – 014 are monitored during storm events.

Revised Tentative Cease and Desist Order

1. Finding 25 was added to the CDO to document the Department of Toxic Substances' Imminent and Substantial Endangerment Determination and Order and Remedial Action Order issued to Santa Susana Field Laboratory. The Order provided the basis for the ongoing cleanup of the Northern Drainage Area.

There were no changes to the Revised Tentative WDR issued on April 6, 2009. Therefore, a copy of that document is not included in this package.

In accordance with administrative procedures, this Regional Board will conduct a public hearing on the enclosed tentative orders and comments submitted in writing regarding any and all portions thereof at a two (2) day board meeting scheduled for May 7 and 8, 2009. The Board meeting will beginning at 10:00 a.m., on May 7 and at 9:00 a.m., on May 8, 2009, at the Ventura County Government Center, Board of Supervisors Hearing Room, 800 South Victoria Avenue, Ventura, California. The Boeing Facility Orders are Items Number 13 and 14 on the Agenda. Stakeholders should be aware that the item may be called at any time. Staff has been advised to be present both days in the event items are postponed or the schedule is changed. The Board will hear any testimony pertinent to this discharge and the revised-tentative requirements. It is expected that the Board will take action at the hearing; however, as testimony indicates, the Board, at its discretion, may order further investigation.

If you have any questions, please contact Cassandra Owens at (213) 576-6750.

Sincerely,

Cassandra D. Owens

Cassandra Owens, Chief
Industrial Permitting Unit

Enclosures: Response to Comments Table
Revised Fact Sheet
Revised-Tentative Monitoring and Reporting Program
Revised Tentative Cease and Desist Order

Mailing List

Honorable Fran Pavley, Senator, 23rd District
Honorable Alex Padilla, Senator 20th District
Honorable Tony Strickland, Senator 19th District
Assembly member Bob Blumenfield, Assembly member 40th District
Assembly member Audra Strickland, Assembly member 37th District
Ms. Rondi Guthrie, c/o Assemblywoman Audra Strickland
Mr. Jarrod Degonia, c/o Assembly member Cameron Smyth
Mr. Aron Miller c/o Senator Fran Pavely
Ms. Samantha Stevens, c/o Assembly member Bob Blumenfield
Environmental Protection Agency, Region 9, Permits Branch (WTR-5)
Mr. Thomas Kelly, Environmental Protection Agency, Region 9, (WTR-5)
Environmental Protection Agency, Region 9, Office of Radiation Programs
Mr. Michael Lopez, U.S.D.O.E., Oakland
Mr. Thomas Johnson, ETEC Project Manager, United States Department of Energy
Ms, Rebecca Tadesse, Branch Chief of Materials Decommissioning, U.S. Nuclear Regulatory Commission
U.S. Army Corps of Engineers
NOAA, National Marine Fisheries Service
Department of Interior, U.S. Fish and Wildlife Service
Mr. Michael Levy, State Water Resources Control Board, Office of Chief Counsel
Mr. William Paznokas, Department of Fish and Game, Region 5
Mr. Norm Riley, Department of Toxic Substances Control, Sacramento
Mr. Jim Pappas, Department of Toxic Substances Control, Sacramento
Mr. Gerard Abrams, Department of Toxic Substances Control, Sacramento
California Coastal Commission, South Coast District
Department of Health Services, Public Water Supply Branch
Los Angeles County, Department of Public Works, Environmental Programs Division
Los Angeles County, Department of Health Services
City of Los Angeles, Bureau of Engineering, Wastewater Systems Engineering Division
ULARA Watermaster
Water Replenishment District of Southern California
Ventura County Air Pollution Control District
Ventura County Public Works
Ventura County Environmental Health Division
Ms. Linda Parks, Ventura County Board of Supervisors
Ms. Nicole Doner, Ventura County Planning Division
Mr. Rick Verguitz, Water & Environmental Resources Section, Ventura County Watershed Protection District
City Manager, City of Simi Valley
Dr. Mark Gold, Heal the Bay
Mr. David Beckman, NRDC
Mr. Mati Waiya, Wishtoyo Foundation
Friends of the Los Angeles River
Los Angeles and San Gabriel Rivers Watershed Council
Bell Creek Homeowners Association, c/o Michael Bubman

Mailing List (continued)

Bell Creek Homeowners Association, c/o Jerry Murphy
Ms. Carol Henderson, Office Manager, Bell Canyon Association
Ms. Barbara Johnson, Susana Knolls Homeowners, Inc.
Ms. Gayle Demirtas, Simi Valley Library
Mr. Howard Kaplan and Mr. Arthur Pinchey, Brandeis-Bardin Institute
Dr. Joseph K. Lyou, Executive Director, Committee to Bridge the Gap (CBG)
Mr. Dan Hirsch, CBG
Mr. Sheldon Plotkin, SCFS
Mr. Wayne Lee
Simi Valley Library
California State University, Northridge
Mr. Evan Rose, L.A.U.S.D.
Mr. Cybil Zeppieri
Mr. Lori Zinkan
Ms. Christina Walsh
Ms. Teresa Jordan
Ms. Mary Wisebrock
Masry & Vititoe Law Offices
Mr. Matt Hagemann, Soil/Water/Air Protection Enterprise
Ms. Bonnie Klea
Mr. John Farrow, M. R. Wolfe & Associates, P.C.
Mr. Anthony Zepeda
Ms. Lorraine Scott
Florence and Dorri Raskin
Ms. Heather L. Hoecherl Esq., Director of Science and Policy, Heal the Bay
Ms. Kirsten James, MESM, Staff Scientist, Heal the Bay
Ms. Elizabeth Crawford
Paul Costa, Boeing
Ms. Sharon Rubalcava, Weston, Benshoof, Rochefort, Rubalcava, MacCuish, LLP
Ms. Darlene Ruiz, Hunter Ruiz Research, Consulting and Advocacy
Mr. Jack M. Wallace
Mr. Adam Salkin
Ms. Jeannie. Chari
Ms. Nicole Donner
Ms. Carissa Marsh, The Simi Valley Acorn
Ms. Chris Rowe

Item 13 and 14
Response to Comments

The Boeing Company
Santa Susana Field Laboratory
Tentative Order No. R4-2009-00XX
NPDES Permit No. CA0001309, CI No. 6027

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
Letter dated April 14, 2009 from Peter H. Weiner of Paul, Hastings, Janofsky & Walker LLP on behalf of the Boeing Company						
	1	The benchmarks for Outfalls 008 and 009 can and should be extended to June 26, 2012. In its March 16, 2009 Tentative WDR, CDO, and Fact Sheet, the Regional Board proposed extending the benchmarks for Outfalls 008 and 009 for three years to June 26, 2012. As the Regional Board expressly recognized, this extension was necessary to allow sufficient time to perform an Interim Source Removal Action ("ISRA") in the watershed areas for Outfalls 008 and 009 as directed by the Regional Board's Order of December 3, 2008, issued pursuant to is authority under Water Code Section 13304 ("13304 Order"). The Order directs Boeing to undertake source removal of soils to address the presence of contaminants that have resulted in exceedances of the effluent limitations established for Outfalls 008 and 009. Boeing submitted a Preliminary ISRA Work Plan on February 13, 2009 and will submit a final ISRA Work Plan on or before May 1, 2009. As described in the Preliminary Work Plan, it will		X	The tentative waste discharge requirements (WDR), Cease and Desist Order (CDO), and Fact Sheet issued on March 16, 2009 did include a time schedule for the benchmarks at Outfalls 008 and 009 that extended through June 26, 2012. Subsequently, staff was advised that since the benchmarks were based on the California Toxics Rule (CTR) and the State Implementation Policy (SIP), the associated implementation criteria included in the SIP the implementation schedule must terminate on May 17, 2010. The scheduled compliance date included in the permit could not be extended beyond that date. The Discharger has appropriately indicated that the benchmarks for Outfalls 008 and 009 are enforceable effluent limitations based on the SIP and the CTR. They are not interim effluent limitations that impose less stringent standards; however exceedance of the numeric criteria during the interim period does not immediately result in a formal enforcement action. The implementation of the benchmark thus provides the discharger with an opportunity to evaluate implemented BMPs, evaluate the performance of the BMPs, upgrade or replace the BMPs as required during an interim period.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		take several years to plan for and implement the source removal measures and complete restoration activities. Boeing cannot and should not be expected to comply with stringent numeric limitations during that period." ..."Therefore, this Order includes a schedule that terminates on May 17, 2010." Tentative WDR at 38(¶97). The Board's conclusion is incorrect. The benchmarks for Outfalls 008 and 009 can extend to 2012 because they are final enforceable effluent limitations based on the SIP and California Toxics Rule ("CTR"); they are not compliance schedule that impose less stringent standards. An exceedance of a benchmark is immediately enforceable by the required implementation of improved BMPs and, if a permittee does not take positive action, the Regional Board may determine that it is in violation of its permit.[2] Indeed controlling case law explains that numeric effluent limitations are not necessarily required for storm water discharges and that benchmarks with BMPs "are in fact [water quality based effluent limits] which a permitting authority may employ when it has found that storm water discharges may cause a receiving body to exceed water quality standards." .... "Extending the benchmarks for Outfalls 008 and 009 for three years therefore is permissible and makes good sense. The			Board staff envisions that when that interim period has concluded the Discharger will again be subject to fines associated with violations of effluent limitations. This is a compliance schedule. Therefore, staff continues to believe that what is actually provided in the permit is a compliance schedule when a time period is associated with the benchmark as defined in the permit. Therefore, staff continues to believe that the schedule which is included in the permit ends appropriately on the last date allowable by the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California (SIP). However, staff also believes that the change in strategy associated with the California Water Code Section 13304 Order (ISRA) that was issued on December 3, 2008 has significantly impacted the Discharger's ability to come into complete compliance with the effluent limitations at Outfalls 008 and 009 on June 10, 2009. The ISRA Order provides the direction for the Discharger to remove impacted soil from these two watersheds which have contaminant concentrations in soil that exceed the Department of Toxics Substances Control-approved soil background concentrations, 2005, and which have exceeded numeric effluent limitations at the site.	

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		Board can and should extend the benchmarks for Outfalls 008 and 009 until June 26, 2012, as the Board originally proposed."				
	2	**The relationship between ISRA and the ENTs must be clarified.** "It is unclear from the Tentative WDR, CDO, and Fact Sheet whether the Regional Board expects Boeing to design and implement the Engineered Natural Treatment system ("ENTs") based on the results of the ISRA, or whether it expects Boeing to implement the ENTs contemporaneously with the ISRA. Compare Tentative CDO at 7 (¶ 41) ("Interim source removal coupled with the implementation of the ENTs at Outfalls 008 and 009 enhances the Discharger's ability to achieve full compliance with the NPDES permit.") (emphasis added) with Tentative CDO at 9 (¶ 4) (requiring Boeing to "[s]ubmit a report on the results of the ISRA "and" ENTs implementation based on data "collected after completion of the ISRA and/or implementation of ENTs") (emphasis added); see also Tentative CDO at 6 (¶ 27), 8 (¶ 42), 9 (¶4); Tentative Fact Sheet at 48. Only the former makes sense. As the Board has explained, the ISRA is designed to reduce the level of constituents being discharged from Outfalls 008 and 009 and allow those discharges to achieve compliance with water quality standards. See 13304			The Interim Source Removal Action (ISRA) Order requires the delineation of source areas and subsequent treatment of the source. Planning for the implementation of the ISRA has already begun. Efforts to review the data sets available and to determine source areas that because of contaminant concentrations in the soil have the potential to cause or contribute to effluent limit exceedances in the storm water runoff are progressing. Subsequent evaluation of the soil data and the enumeration of areas where data gaps exit are scheduled for completion by May 1, 2009. Staff believes that ISRA will commence immediately upon approval by the Regional Board. Staff believes the schedule provided will result in data gap prior to the May 1, 2009 submittal and the movement of soil prior to December 2009 at Outfall 008. The specified areas are addressed based on the approved plan. ENTs will be implemented for sediment control after the ISRA action. Subsequent storm events will provide data to evaluate the effectiveness of the ISRA with addressing the elevated contaminant concentrations. That data will be used to determine where more refined ENTs will be placed and the chemicals of concern that they will be designed to address.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		Order; Tentative CDO at 6. The ISRA will take three years to implement, and it is only after this period that Boeing and the Regional Board will be able to determine the ISRA's effectiveness and design any subsequent ENTs accordingly. The Board therefore should clarify that Boeing will not be expected to implement the ENTs during the time that it is implementing the ISRA, and that the ENTs will be designed in light of the ISRA's results.[3] In addition, the Tentative CDO implicitly contemplates some continuing work by the Expert Panel established pursuant to the 2007 CDO.4 See Tentative CDO at 7 (¶ 40); see also Cease and Desist Order No. R4-2007-0056 at 8 (¶ 43), 10 (¶ 3.b) (Nov. 1, 2007). We assume that part of that work will be consideration of the timing and design of any ENTs as a result of the ISRA, as well as continuing the work that the Regional Board assigned the Panel in the 2007 CDO. We would appreciate confirmation of our understanding in the final permit."				
	3	**The Reasonable Potential Analysis should account for constituents that have never been detected or detected below applicable limits.** Boeing concurs that the data do not reveal new constituents with reasonable potential. However, Boeing submitted extensive information in the ROWD demonstrating that many constituents for which Boeing is required to conduct a RPA have never been			A number of constituents that have never been detected continue to be chemicals of concern at the site. This is indicative of either the fact that the chemicals are not being mobilized by storm water runoff, or they are not present in surface soils. The site cleanup operations will require in some cases excavation. The excavation process exposes soils historically shielded by the surface soils. The possibility of those soils and the associated contaminants being mobilized by wind and or storm water runoff is high. Therefore, staff believes it prudent to continue monitoring for constituents that to date have not been detected or that	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		detected (see Form 200, Section IV, Table 4) or, if they have been detected, have been detected below applicable limits (see Form 200, Section IV, Table 5). Neither the Tentative WDR nor the Tentative Fact Sheet addresses this information or explains why, despite that information, these constituents still warrant stringent effluent and monitoring requirements. If a RPA is conducted for the purpose of potentially including new constituents for monitoring, then the RPA also should provide a basis for removing from the monitoring regime constituents that have been shown to present no risk to water quality objectives. See December 2008 ROWD (listing constituents that have never been detected or detected below applicable limits).			have been detected below the applicable limits to ensure that the levels of those constituents in the storm water runoff are within the acceptable standards.	
	4	Finally, Boeing continues to believe that it is inappropriate to conduct a RPA for discharges, such as those at Santa Susana, that are storm water-only discharges. Boeing also maintains that the Regional Board, not Boeing, should perform the analysis to the **extent it is required. See ROWD at Form 200, Section IV, pp. 12-13 (Tables 4 and 5).**		X	Staff disagrees. The site history, the fact that the site has been recommended for National Priority Listing, the fact that the site is currently involved in a Resource Conservation Recovery Act (RCRA) assessment and cleanup provides evidence of the amount of pollution available on the site. The availability of a robust data set provides evidence of exceedances of applicable water quality based effluent limitations is the basis for continuing to regulate discharges from the site utilizing numeric effluent limitations.	None required.
	5	**The WDR should include a site-specific design storm.** In the Tentative WDR and Fact Sheet, the Regional Board has declined this request on the basis that it would be "premature" to establish a regional or site specific design storm before additional technical work is		X	As specified in the Fact Sheet, **Design Storm:** Following the adoption of the NPDES permit on November 1, 2007, Order R4-2007-0055, and the Cease and Desist Order (R4-2007-0056), the Discharger assembled a panel to review site conditions, modeled flow, contaminants of concern and evaluate the BMPs capable of providing the required treatment to meet the final effluent limitations. The panel initially evaluated site conditions and on April 30,	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		performed, and before "a full consideration of the policy considerations of adopting a regional design storm policy." See Tentative Fact Sheet at pp. 46-47. The Board also has explained that it "believes it is not appropriate to incorporate the design storm into the permit at this time" in light of ongoing uncertainties. Id. Boeing respectfully disagrees. The Regional Board required the formation of the Expert Panel "to review site conditions, modeled flow, contaminants of concern, and evaluate the BMPs capable of providing the required treatment to meet the effluent limits." See Cease and Desist Order No. R4-2007-0056 at 10 (¶ 3.b) (Nov. 1, 2007); see also Fact Sheet for Order No. R4-2007-0055 (Oct. 15, 2007) at 46; Order No. R4-2007-0055 (Nov. 1, 2007) at 55, 58. In furtherance of this mandate, and as the Board recognizes, see Tentative WDR at 38 (¶ 96), the Expert Panel prepared its report, "Expert Panel Final Consensus Recommendation on a Site Specific Design Storm for Santa Susana," and recommended a design storm of 2.5 inches during a 24-hour period or 0.6 inches in an hour. This analysis relied on continuous hydrologic simulation and a separate corroborating model.[5] In light of the extensive information provided to the Regional Board on the proposed site-specific design storm, the WDR should reflect this recommendation. Boeing recognizes that the Tentative WDR includes a reopener clause			2008, issued a report entitled "Expert Panel Final Consensus Recommendation on a Site Specific Design Storm for the SSFL." The Expert Panel recommended a site specific design storm defined as either 2.5 inches during a 24-hour period, or 0.6 inches in an hour, as measured at the Area IV rain gauge located at the SSFL. The Regional Board has funded the preliminary work for the development of a regional design storm and the associated policy. This work is documented in the Fact Sheet in the section titled Regional Board's Wet-Weather Task Force. Regional Board staff anticipates that further work will be needed before proposing a regional design storm policy or any site-specific design storm, in order to further explore these assumptions and generalizations; evaluate the efficacy of the design storm for different pollutants and land uses; refine the data used in modeling the water quality outcomes of potential design storms and consider policy implications with regard to incorporating design storms into permits. It is therefore premature to establish a regional design storm or site-specific design storm prior to this additional technical work and prior to a full consideration of the policy considerations of adopting a regional design storm policy. Regional Board staff also believes it is not appropriate to incorporate the design storm into the permit at this time. Depending on how the design storm is implemented, the size of the storm stipulated by the Expert Panel would result in storms each year that would generate runoff which may not be required to comply with the final effluent limitations that are currently in the permit. The development of a policy is essential to ensure that when a design storm is approved; the implementation of the design storm is consistent throughout the region. There is	

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		to reconsider a site-specific design storm in the future. Tentative WDR at 57 (¶ D). Although Boeing supports the inclusion of this clause in the final permit and looks forward to the opportunity to bringing this important issue before the Board, Boeing believes that the time is ripe to adopt a site-specific design storm now.			currently no policy in place for the Los Angeles Region or in any other region throughout the state that Regional Board staff is aware of. However, the work completed on the design storm provides the basis for the design of the BMPs around the site. The April 30, 2008, memo from Boeing provided a formal request to implement the Expert Panels' Final Consensus Recommendation on a Site Specific Design Strom also provided guidance regarding how they expected the design storm to be implemented. The letter requested that: "If the total precipitation depth from the on-site precipitation gauge(s) is equal to or greater than 2.5 inches during the first 24-hours of a rain event, or equal to or greater than 0.6 inches during any one hour within the first 24 hour period, the effluent limitations in the table in sections I.B.3-4 (with the exception of Outfall 019) shall serve as benchmarks as defined in finding 91, paragraph five." The implementation of the design storm as proposed effectively changes all of the numeric effluent limitations to benchmarks for all outfalls except 019 when the storm depth exceeds 2.5 inches. Data collected prior to the 2.5 inch depth would not be used to evaluate compliance. The information provided on the storms that may be missed indicates that each storm season has at least one storm that will exceed the criteria.	
	6	**The Regional Board should allow the use of composite sampling.** "Boeing requested in its ROWD that the Regional Board allow storm water samples to	X		The original sampling protocol stipulated for the Santa Susana Field Laboratory was based on EPA guidance, "NPDES Storm Water Sampling Guidance Document" July 1992. The guidance specifies that both grab and composite samples are acceptable for industrial	Updates to the MRP will be implemented.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		be collected using composite sampling, rather than grab sampling, for constituents where such sampling is allowed pursuant to 40 C.F.R. § 122.21(g)(7). This request was based on the recommendation of the Expert Panel in its April 30, 2008 letter to the Regional Board. The Expert Panel provided additional support for this position in its October 20, 2008 memorandum, "Sample Collection Methods for Runoff Characterization at Santa Susana Field Laboratory." The Regional Board, however, has denied this request on the basis that "the data collected previously [at Santa Susana] indicates that there is no difference between grab and composite samples." Tentative Fact Sheet at p. 47. The data set on which the Regional Board relied in reaching this conclusion is extremely small and is contradicted by the large body of information collected by the Expert Panel. This information clearly shows that composite sampling is more representative than grab samples of constituents in storm water discharges. More accurate samples will yield more reliable information, which will in turn be more useful in advancing water quality objectives. We urge the Board to reconsider its decision."			discharges. Therefore, on May 20, 2004 a California Water Code Section 13267 request was issued to require the Discharger to sample both storm water and dry weather discharges at Outfalls 003 and 011. The data collected was summarized in a report submitted to the Regional Board on January 17, 2007. The report provided evidence that the two sample types did not provide different results. The data presented by the Expert Panel coupled with comments from Committee to Bridge the Gap (CBG) regarding the inability of the discharger to collect samples during the first hour of the rain event has prompted staff to include composite sampling in the permit for all constituents allowed in 40 CFR.	
	7	**The compliance monitoring points at Outfalls 012, 013, and 014 should be removed from the WDR.** As the Regional Board is aware, Outfalls 012-		X	Staff disagrees. Outfalls 012, 013, 014 are the former locations where rocket engine test operations occurred. Those historical operations resulted in releases of TCE to the soil and more recently significant amounts of water used for quenching operations. The testing and quench	

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		014 were established to monitor wastewater discharges associated with rocket engine testing at those locations. In its comments on Tentative WDR R4-2007-00XX (finalized as Order No. R4-2007-0055 (Nov. 1, 2007)), Boeing requested permission to remove the compliance points at Outfalls 012-014 after such testing was terminated. The Regional Board denied this request on the basis that sampling results after the testing was completed would provide useful information, and retained the outfalls as monitoring points, with the numeric limits serving as benchmarks. "Boeing submits that a sufficient amount of useful data to be provided by continued sampling at the Outfalls 012, 013 and 014 monitoring points will have been collected after two additional seasons of sampling after structure removal. Accordingly, the final WDR should provide that the monitoring points at Outfalls 012, 013 and 014 will be eliminated once that additional post-sampling monitoring has been completed."			operations have resulted in contamination in the soil in the vicinity of these operations. Therefore, it is important to monitor the contaminant concentrations in storm water exiting these areas and to compare these concentrations to those observed at downstream locations, Outfall 018 downstream of Outfalls 012 and 013, and Outfall 011 downstream of Outfall 14.	
	8	**Effluent limits must be reasonable.** "Above all, water quality standards and discharge limits must be reasonable. This reasonableness standard is enshrined in the California Porter-Cologne Water Quality Control Act. See Cal. Water Code § 13000 ("The Legislature further finds and declares that activities and factors which may affect the quality of the waters of the state shall be			The effluent limitations must protect the beneficial uses of the receiving waters. The process of developing water quality criteria includes feasibility studies as well as analysis of the contaminant concentrations that are protective of human health and the environment. A water quality standard defines the water quality goals of a water body, or portion thereof, by designating the use or uses to be made of the water and by setting criteria necessary to protect the uses. States adopt water quality	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		regulated to attain the highest water quality which is reasonable...."); id. § 13241 ("Each regional board shall establish such water quality objectives in water quality control plans as in its judgment will ensure the reasonable protection of beneficial uses and the prevention of nuisance; however, it is recognized that it may be possible for the quality of water to be changed to some degree without unreasonably affecting beneficial uses."). ".....Factors to consider in establishing water quality standards and effluent limits include, but are not limited to, natural background conditions, the feasibility of achieving water quality conditions, the special challenges associated with compliance for storm water discharges, and economic considerations. These and other factors should be applied to the establishment of the numeric limits in the WDR."			standards to protect public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act (the Act). "Serve the purposes of the Act" (as defined in sections 101(a)(2) and 303(c) of the Act) means that water quality standards should, wherever attainable, provide water quality for the protection and propagation of fish, shellfish and wildlife and for recreation in and on the water and take into consideration their use and value of public water supplies, propagation of fish, shellfish, and wildlife, recreation in and on the water, and agricultural, industrial, and other purposes including navigation. Such standards serve the dual purposes of establishing the water quality goals for a specific water body and serve as the regulatory basis for the establishment of water quality based treatment controls and strategies beyond the technology-based levels of treatment required by sections 301(b) and 306 of the Act.	
	9	**Neither the Fact Sheet nor the WDR should attribute contamination at Santa Susana to past activities.** Boeing is not aware of any new evidence that substantiates the conclusion that regulated constituents with elevated concentrations in stormwater discharges from Santa Susana "are present as a result of past operations." To the contrary, extensive evidence, data, and analysis have been submitted to the Regional Board indicating that elevated levels of many			The data collected thus far at the site provides substantial evidence that a number of contaminants present in the storm water exiting the site are also present in elevated concentrations in the surface soils. Specifically, concentrations of TCDD equivalents present in storm water runoff exiting the site from Outfall 008 has exceeded the specified criteria in the NPDES permit. Data collected at Outfall 008 indicates that maximum effluent concentration (MEC) of TCDD in the storm water was 3.19 $X10^{-7}$ µg/L. The MEC exceeds the daily maximum effluent limitation for TCDD equivalents of 2.8 x 10^{-8} µg/L. The Outfall 008 watershed has concentrations of TCDD in soil of 97.5 pg/g.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		regulated constituents (and, in turn, the exceedances of Boeing's NPDES permit) are attributable to conditions outside of Boeing's control. Nonetheless, in compliance with the Regional Board's 13304 Order, Boeing will be undertaking the ISRA to remove constituents of concern from the Outfalls 008 and 009 watershed. Pending the results of monitoring data collected following the implementation of the ISRA, further study may be required to determine the source(s) of these constituents. For these reasons, the sentence referenced above which attributes the presence of constituents with elevated concentrations to past operations should be deleted from the Fact Sheet."			The 2005 soil background concentration for TCDD is 0.87 pg/g .	
Letter dated April 15, 2009 from Christina Walsh Cleanuprocketdyne.org, Founder/Director ACME Aerospace Cancer Museum of Education						
	10	We appreciate the summarizing letter dated March 25, 2009 indicating the various requests submitted by the discharger to the board and will start with our comments on this list of requests: We continue to be surprised by the continued effort to look-less in requesting that sampling by discontinued in areas where associated buildings were recently demolished. There is a reasonable potential for mobilizing constituents of concern during these processes and especially during the recovery and re-vegetation periods, it would seem most prudent to sample these areas in order to be			The letter summarizing the requests submitted by the Discharger was requested by Mr. Daniel Hirsch of Committee to Bridge the Gap. The revised tentative requirements issued April 7, 2009, includes no changes in the monitoring requirements relative to the current Order.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		able to understand the effectiveness of the soil and/or source removal and implemented BMPs and their effectiveness. The response to this is unclear. "The provision was not included" and that the benchmarks will now serve as the effluent limits?				
	11	Additional time is not appropriate as the needed time for sampling, analysis as well as public process are considered within the schedule.			Staff is unsure whether you are referring to the period of time that staff is recommending when benchmarks are the applicable criteria at Outfalls 008 and 009 during the time when the ISRA Order is being implemented. However, staff believes that the three year compliance period to implement the requirement of ISRA is the shortest time practicable.	None required.
	12	It is completely inappropriate to perform a reasonable potential analysis on a quarterly basis when most of the year remains dry. The continued effort to remove compliance rather than removing contaminants is disturbing. We appreciate the boards' denial of these requests and caution that the re-opener based on the SIP deadline of May 17, 2010 should not be reason to further extend the compliance schedule. Further, the reopener that has been included in the order allows for modification or rescission of the implementation schedule, but modification should included potential to extend the schedule.			The quarterly RPA was instituted in response to Board direction and the lack of resources on this project. The Discharger is required to submit a quarterly RPA analysis. Staff reviews and verifies the analysis and the data and subsequently performs an interim analysis. If any new chemicals of concern trigger reasonable potential (RP) staff was directed to bring the permit back to the Board as soon as practicable to include an effluent limit for that constituent.	None required.
	13	Cease and Desist Order No. R4-2009-OOXX Background, 3 - Insufficient and underplays the significance of nuclear accidents such as the SRE, AE-6, and SNAP programs and the potential radiological contamination that may			The site history does include nuclear accidents and the potential for radiological contamination to be transported via storm water. Staff agrees that this is an important issue for the work that is to be completed at the facility. However, the Cease and Desist Order No. R4-2009-00XX, is to address exceedances in the storm water runoff from two Outfalls 008 and 009. To date, we have not noted	

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		have migrated down these drainages through stormwater run-off.			exceedances of radionuclides in the storm water exiting these watersheds. The Order provides the basis for the decision to look for contaminants in the watersheds that have been present at elevated concentrations in the storm water exiting these watersheds. Since radionuclide effluent limitations have not been exceeded, they have not been highlighted in the discussion. However, during the ISRA action the current protocol approved and implemented by DTSC at the Northern Drainage area will be implemented on excavated soils prior to disposal.	
	14	While the Order applies specifically to outfalls 8 and 9, the finding of contamination and subsequent Imminent and Substantial Endangerment Determination and Order, and Remedial Action Order[2] that was issued November 1, 2007 by DTSC's Norman Riley. This removal action is directly relevant to the source removal action being contemplated now. The removal of these harmful materials demonstrates "reasonable potential" and yet, the polluter continues to ask for reasons to remove these harmful COCs from the sampling list. All removal actions related to these areas must be considered when determining reasonable potential analysis, and all COCs detected during those removal actions should, at a minimum, be included in the sampling monitoring program applying numeric limits. Benchmarks should only apply when a			Staff agrees that all of the activities ongoing at the site must be considered. Staff is aware and issued a Clean Up and Abatement Order (CAO) No R4-2007-0056 to ensure that the beneficial uses of the waterway be preserved. That CAO provided water quality objectives for human health and organisms only that were to be used to compare with the results of sampling collected upstream and downstream of specified areas that were targeted for cleanup. The samples are to be collected 50 feet upstream and 50 feet downstream of the area in the stream bed where work is occurring. These locations are well upstream of the Outfall 009 location and closer in proximity to the area where the contaminants are located. The data collected since the Order was issued has not yielded exceedances of the criteria stipulated in the CAO. effluent limitations and required sampling for chemicals of concern in the area. This data indicates that even though the contaminants were present in the soil and debris piles; they were not mobilized in the storm water runoff. The current NPDES permit requires monitoring for these contaminants.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		constituent is being actively remediated, and only during the course of that remediation and/or removal action process. Since the COC's found during the ISEO are certain, rather than merely "potential," numeric effluent limits should apply to all.				
	15	TCE use and resulting contamination is not adequately described here. Sampling for vinyl chloride is not mentioned when it is the most toxic of the breakdown decay products of TCE.			Staff acknowledges that TCE use onsite has resulted in contamination of the groundwater. Finding 73, Page 30 of the revised-tentative WDR provides a description of the basis used to include TCE in the list of contaminants with numeric effluent limitations.	None required.
	16	Happy Valley Interim Measure that took place several years ago, should also be considered here as should the fact that perchlorate bio-remediation took place in an area that flows to Outfall 9 based on some existing stormwater runoff pipes, so perchlorate should be considered at both outfalls. We are pleased to hear that the area has had compliance with the perchlorate effluent limit, but since there remains a perchlorate plume subsurface in the building 359 area, there remains a groundwater contamination risk and subsequent surface water risk due to seeps and springs. In addition, the stormwater drainage from the adjacent APTF area does drain to the Northern Drainage and should be considered a potential migration pathway.			The Happy Valley interim measure was designed to address elevated concentrations of perchlorate in storm water exiting the area. The in-situ bioremediation of perchlorate occurred at the former location of Building 359 which is directly across from the Arera1 landfill. Drainage from the area flows to Outfall 011 as does drainage from the APTF. The storm water runoff pipes that were referenced were sealed off several years ago. However, runoff exiting the site via Outfall 009 is sampled. Contaminants present in elevated concentrations would be detected in the sample. The perchlorate limitation in place for outfalls 008 and 009, remains in place as does the requirement to monitor for the constituent.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
	17	Stormwater Drainage pipes and reclamation pipes lead previously down into the Northern Drainage Creek area (removed post fire in 2006), therefore historical documentation and aerial photographs should be used to determine sources of these pipes which may have contributed to historic contamination of surface soils through repeated releases over the course of decades of operations.			Comment noted. If you have access to the referenced aerial photos or specific references, please provide them to Regional Board staff working on the ISRA. This evidence is important and your comment will be considered during the development and implementation of the ISRA. The NPDES permit regulates the contaminants in the storm water runoff from that area. If the contaminant is present in the runoff and the concentration detected demonstrates reasonable potential effluent limits for that contaminant will be included in the permit.	None required.
	18	Area II Landfill also received waste from the Canoga Facility when it was Air Force Plant 57 according to the TechLaw report, therefore all recorded wastes from Canoga should be considered COCs at this outfall.			A portion of the Area II Landfill drains into the Northern Drainage and flows offsite via Outfall 009. Contaminants present and mobilized by storm water runoff would likely be present in the storm water runoff. The reasonable potential analysis would be used to determine if the constituent is present at concentrations that could cause or contribute to an exceedance of water quality based effluent limitations. During the development of the permit staff received from DTSC a list of contaminants that may be present at each of the Resource Conservation Recovery Act (RCRA) sites that had been identified onsite. That list was utilized to develop the list of chemicals of concern (COCs) to monitor. A determination that reasonable potential exists for one of these constituents results in the inclusion of that constituent with an effluent limitation in the permit.	None required.
	19	It should be noted in the discharge history that dioxin violations for the TCDD congener had exceedences BEFORE the 2005 fire which has been blamed for much of the dioxin problems at the site despite the fact that these concentrations are not consistent with that of burned vegetation,			Staff is aware that there were exceedances of the TCDD total equivalents prior to the 2005 Topanga Fire.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		but rather from burning operations as existed at the site.				
	20	Review on December 13th, 2006 resulted in the removal of outfalls 1 and 2 as compliance points. It should be noted that while the CDO does not allow for discharge of pollutants, the removal of outfall 2 results in stormwater from Area IV via the STL IV area (located in Area III) will be missed from compliance regulation. In reviewing this area with DTSC and Boeing on a recent site visit it was also noted by DTSC's Ms. Rainey that similar detections of Barium and Sodium are consistent with Area IV detections and sheet runoff should be considered here. During another recent visit to review portions of the NASA property, it was noted that the R2 Pond had been drained and therefore, the bottom sludge material would be mobilized at the next storm event. We would suggest that this area be sampled so that COC's at the receiving outfall (2) can be compared. The bottom was noted to be oily in appearance, in addition to rust and other unnatural colors:		X	Outfalls 001 and 002 were not removed. However, based on concerns from the State Board that the inclusion of numeric effluent limits at upstream locations would result in double counting required that staff review some decisions. Staff decided to keep Outfalls 011 and 018 as compliance points with numeric effluent limits. Outfalls 001 and 002 would have the same numeric effluent limits but they serve as benchmarks. An exceedance of the benchmarks during two consecutive monitoring events mandates that the Discharger review the BMPs in place and as required update or replace them.	None required.
	21	December 13th Draft Order discusses review to "ensure that numeric effluent limitations for different outfalls do not count the same violation twice in such a manner as to treat a single violation as multiple violations" where outfalls 1 and 2		X	Comment noted. See response above.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		were removed as compliance points. It should be noted that by sampling from the lowest outfall (1 and 2) upwards, it would be impossible to double count any single violation. By removing these outfalls as compliance points, the board runs the risk of potential stormwater contaminants reaching sensitive receptors such as people and local wildlife.				
	22	Groundwater treatment and related decisions made on the ISRA and CDO and general WDR issues as well as all related documents should be copied to the County of Ventura who will assume lead agency position for the Groundwater Treatment system that is in part, related to the decisions being made here. On the basis that those CUP approvals may impact the schedule and ultimately the ability to comply with the permit, we urge the board to invite their involvement in the process to help expedite and provide the necessary broad view to the permit approval process. Please be sure that final order includes all COCs related to all activities at outfalls 8 and 9 including recent removal actions under the supervision of DTSC for soil and waste/debris removal under the ISEO issued 11/1/2007.	X		Several offices in the County of Ventura are included on the interested parties list for all of the correspondence associated with the Santa Susana Field Laboratory. Ms. Linda Parks and Mr. Damon Wing are also included on the list of interested parties. However, you comment is timely as Ms. Nicole Doner, the person who is handling the application of the ENTs is not on the list. Staff has been in contact with her via phone and will add her name to the interested parties list. The COCs specified for the removal action are included in those that are required monitoring except asbestos. The Cleanup and Abatement Order No R4-2007-005 includes a requirement to monitor for those chemicals. Staff will update the Monitoring and Reporting Program to include a requirement to monitor for asbestos.	Update interested parties list to include Nicole Doner and Rick Viergutz with Ventura County.
	23	**Revised Tentative Board Order – Waste Discharge Requirements (WDR R4-2009-00XX** **<u>Background and Description of Facility</u>** Expanded site history and facility description		X	The background description or findings included in the Order is designed to provide a brief overview of historical operations and a summary of the basis used to develop the effluent limitations, receiving water limitations, provisions, prohibitions, and monitoring program.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		using all available HSA information should be expanded here as well. Please note TCE usage conflicts under Rocket Engine and Component Testing as noted under TCE comments above.				
	24	Finding 33 - does not adequately state the drainage from the APTF area as there is an existing storm-drain that exits toward the Northern Drainage. It is not clear when this was used or if it is active now, but this potentially contributes to the exceedences at outfall 9.		X	The drainage pipes noted above were sealed several years ago. The drainage from APTF based on the contours in the vicinity does not flow toward Outfall 009 but toward Outfall 011 and down through Outfall 001.	None required.
	25	Finding 35 - Stormwater only as described here, still runs across potentially contaminated surface soils with the potential to carry with it, the contaminants on the surface. 003 RMHF Drainage was found to be the most highly contaminated area on the site, based on the aerial radiation survey done in 1979. The drainage area was unlined spillway for years that led to a pond below, and later replaced with a pipe leading to a Baker Tank. The pond area continues to have point-source problems. 004 SRE continues to have mercury problems and the lower pond held contaminated sodium that was released to the environment. Temporary "hot" storage in the hillside also had potential for migrating to the drainage below. 005 SPB-1 Sodium burnpit where an interim measure was completed, but final			The term storm water only is used to illustrate the fact that the water that potentially transports contamination is not wastewater generated by site operations as was the case historically.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		closure has not been done. In recent characterization during the Group 7 review of this area in the RCRA process, a lower drainage "debris field" where drums were disposed, was defined and is undergoing further investigation. 006 SPB-2 (same as above) and also receives runoff from the ESADA area across the street from the FSDF area. This was another `shooting range' where highly penetrating materials were used. 007 B100 this outfall misses the stormwater run-off from the Building 56 Landfill and Building 56 Landfill Excavation areas entirely. A special request for sampling was submitted and Board staff agreed that sampling was necessary to this area that has undergone very little investigation even though there is a groundwater connection and drums and other debris was observed. The depth of the debris inside this 50ft deep hole is unknown and we have interviewed former workers who have stated that this hole was used for waste disposal. We realize that very little stormwater flow has occurred but would like to reiterate the importance of understand the impacts coming from this area, potentially to the people below. 009 is the subject of the CDO and therefore completely inappropriate to be listed here as "stormwater only" when clearly there has				

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		been a chronic problem and point sources have been identified from the southern portion of the ELV facility where the "burn run-off" pond is located. Ash Pile and STP area also upgradient from this area, as is the Area II landfill which is steep and unlined. 010 Building 203 is also where plutonium was found during the McLaren Hart Study done at the site.				
	26	Finding 41 – Groundwater Treatment System has been in "design" mode for nearly 5 years due to permitting issues. We think it's only appropriate that the Ventura County representatives be present at all meetings and receive copies of all correspondence within the ENTs and groundwater system building and regulatory processes. It is not clear where contaminated water/purge water is taken.	X		The announcements for meetings go out to all interested parties. As stated in response to Comment No. 22, the correspondence referencing Santa Susana Field Laboratory is distributed to three offices in Ventura County Government Center, Ventura County Air Pollution Control District, Ventura County Public Works, and Ventura County Environmental Health Division. In many instances Mr. Damon Wing, who works with Ventura County Supervisor Linda Parks is present at the meetings. The water/purge water collected during sampling of the monitoring wells is collected and disposed of offsite.	None required.
	27	Finding 44 - The R2 a and b ponds are currently empty as detailed in the images pictured in previous pages.			R1 and Perimeter Ponds are currently empty. This is normal during the dry periods and since the rainfall for this year is below the average rate it is likely that the accumulated volume is low. R2 has some standing water but the level of water is very low.	None required.
	28	Finding 50 - Perchlorate found at the site and offsite have been in astronomical amounts. 62,000,000 ppb was found in Dayton Canyon during an environmental investigation on neighboring land slated for development where Happy Valley is directly upstream. 90% of all perchlorate manufactured is used for aerospace/defense purposes. In addition to			Comment noted.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		use as a solid rocket propellant, they also manufactured perchlorate-based flares at the SSFL which could also explain these multiple findings.				
	29	**Reasonable Potential Analysis** The software used to determine reasonable potential analysis was done by SAIC Science Applications International Corporation who is also a contractor for the Boeing Company for the radiological study being done on behalf of the Department of Energy. A Conflict of Interest disclosure check should be required here.			The software that you referenced was used for the 2004 permit. Subsequently, we began using spreadsheets to evaluate reasonable potential.	None required.
	30	It is inappropriate to conduct a RPA on the test stands as indicated in finding 69 on the basis of operations having ceased when there is also legislation being pushed forward to "save the test stands", demonstrating a secondary conflict of interest in this request.			We have storm water only data from the test stands that has been collected after the effective date of Order R4-2007-0055, December 20, 2007.	None required.
	31	Finding 73 - discusses the release of 530,000 gallons of TCE where our evidence points to this number being 10-100 fold higher.			This finding was crafted in July 2004, after a hearing that testimony noting the 530,000 gallon figure.	None required.
	32	Finding 77 - indicates that PAHs and PCBs did not have reasonable potential even though they were both detected above the MCL during the ISEO cleanup process.			Finding 77 provides findings associated with data available for the July 1, 2004 permit, Order R4-2004-0111. The debris field targeted by the ISEO cleanup process was covered over with vegetation and consequently no physical or chemical evidence of the contaminants were evident at that time.	None required.
	33	Finding 81 - states that discharges are "very similar" at outfalls 008-010 as those at other stormwater locations (outfalls 003-007) and therefore the analysis was combined as one evaluation for all stormwater only discharges. This is inappropriate as significantly different operational activities occurred. We would ask			Finding 81 provides Findings of Fact to document the analysis performed for Order R4-2006-0008 which was adopted by the Regional Board in January 2006. Staff concurs that the operations at some of the outfalls were different, however, the contaminants with elevated concentrations were very similar for all of the storm water only discharges in the area.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		that the "similarities" be described in detail as we believe that the priority pollutants at the different locations will vary significantly.				
	34	It is extremely disturbing that almost no data exists for outfall 008 other than perchlorate when off-site contamination has been a problem, and interim measures recovered buried debris included unexploded ordinances.			Outfall 008 was established as a compliance point initially because concentrations of perchlorate were elevated. Prior to 2004, perchlorate was the only constituent monitored at this location. Order R4-2004-0111 required monitoring for all of the priority pollutants at Outfall 008. The reasonable potential analysis (RPA) completed for this location indicated that the COCs were similar to those established at Outfalls 003 through 007, 009, and 010.	None required.
	35	Outfall 009 is inappropriately considered "stormwater only" when several operational areas contribute to the water quality issues at this outfall. Any effort to combine data for the purpose of "reasonable potential analysis" is inappropriate at best, as this will underplay the existence of other pollutants on the basis that there is no data.			All of the watersheds associated with the storm water only outfalls include RCRA sites or areas of concern. The storm water only description emphasizes that no operation generated waste water is discharged via the outfall.	None required.
	36	Outfall 010 is where plutonium was found. In addition, the drainage where the plutonium was found runs below where outfall 009 would monitor the stormwater runoff so the area where confirmed contamination exists, is effectively without regulation.			Outfall 010 has numeric effluent limitations for a host of COCs including the radionuclides that are included in the Los Angeles Region Basin Plan.	None required.
	37	The idea that a reasonable potential analysis was performed on outfall 009 and asbestos, PAHs and PCBs and antimony were not identified despite the need for a removal action of these particular COCs, leads us to believe that this RP analysis was not completed using all available data that is relevant to the outfall			The data collected directly upstream and downstream of the removal action has yielded concentrations of these COCs that exceed the water quality objectives included in the Cleanup and Abatement Order No R4-2007-0054. These exceedances trigger updates to the BMPs. Monitoring at Outfall 009 which is well downstream of the	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		discharges.			removal activities has not yielded exceedances of these criteria.	
	38	Remand: The requirement to remove two outfalls as detailed in finding 88 was inappropriate. Duplicate counting of violations would simply not be possible if the analysis worked its' way up the hill from the lowest outfall to the highest. The removal of an outfall does not remove duplicative counting of violations, but does allow stormwater runoff to leave the site unchecked - a problem that has been chronic for decades. This decision should be reversed now that it has been confirmed that stormwater leaving at STLIV will not be monitored without the replacement of outfall 2 as a compliance point.			Comment noted. The decision to utilize Outfalls 011 and 018 as the compliance points with numeric effluent limitations was based on the fact that these outfalls are close in proximity to the areas of the site where there are Resource Conservation and Recovery Act (RCRA) areas of concern and where past operations have resulted in contamination. That decision was implemented in Order R4-2007-0055 and this Order does not provide any changes to that decision.	None required.
	39	Compliance with Benchmark triggers is already not working as the reasonable potential analysis described for outfalls 8, 9 and 10 combine the results despite the operational differences resulting in impacts that are quite varied. How can benchmark triggers work if data is combined to fill in gaps in missing data. The only appropriate analysis of these outfalls should be by way of sampling analysis of all priority pollutants. Removing any pollutants off the list based on combined datasets is inappropriate.			The historical evaluations of the data indicated that the runoff from Outfalls 003 through 010 were very similar. Consequently, the reasonable potential analysis when it is completed utilizes all the data from sites with similar discharges. However, at the data from each outfall is evaluated separately with regard to exceedances. Whenever, data is available, Board staff is informed within 24-hours of Boeing receiving the data regarding any exceedances of numeric effluent limitations or benchmarks and any detections of constituents that are targeted for monitoring only. That data is subsequently reported in the quarterly monitoring reports. An exceedance of a benchmark alerts both the Regional Board staff and Boeing that the BMPs in place	

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
					may not be effective for addressing that particular chemical of concern. A second exceedance of the benchmark at the same location triggers a formal evaluation of the BMPs, including an inspection and upgrade or replacement of the BMPs utilized. This process is documented in the self monitoring reports submitted quarterly to the Regional Board. The proposed permit does not remove any sampling requirements that were included in the previous Order. The Permittee is required to monitor for priority pollutants annually at all outfall locations.	
	40	Please note that vegetation impacted by the 2005 fire has ALREADY recovered and any claim to the contrary is simply inaccurate.	X		Staff concurs that the vegetation has largely recovered from effects of the fire. However, the findings that appear under the R4-2007-0055 provide the basis for changes to the permit requirements that were the result of the Topanga Fire, changes in facility operations, and directives provided by the State Board after review of a number of appeals filed by the Discharger.	None required.
	41	Potential for mobilized contaminants from the R2 Pond based on rain events impacting the newly drained pond where the sediment bottom may be carried with moving stormwater.		X	The R-2 Pond is not currently empty. However, the effluent limitations in place for discharges from Outfall 018 would include any discharges from the R2 Pond.	None required.
	42	Finding 95 - states that flow from Silvernale pond traverses two other RFI sites prior to entering the R2 Pond but this flow is carried via pipeline so no traversing would exist and so to blame the traversing of other RFI sites as potential for the violations to be "double counted" has no basis and is without merit.			There is an open channel which historically provided the pathway for flow from Silvernale to the R2 Pond. More recently, Boeing has installed pipes to facilitate pond management and to move the water collected in the ponds to the storm water treatment system implemented	None required.
	43	Finding 96- Stormwater Expert Panel went beyond the scope of the ENTS they were			Comment noted. The Expert Panel and any other interested parties are encouraged to submit comments and	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		asked to develop by submitting white papers on regulatory issues such as numeric limits and extensions on regulation, rather than solutions that will reduce the impact on the quality of receiving water.			or recommendations. Regional Board staff routinely considers those comments and determines if they should be submitted for Board consideration. The Regional Board makes the final decision regarding the implementation or rejection of any recommendation submitted. The scope of work specified in the CDO (Order R4-2007-0056) included a review of the site conditions, modeled flow, contaminants of concern and evaluate the BMPs capable of providing the required treatment to meet the final effluent limitations. The reports submitted to date include responses to this mandate as well as evaluations of associated issues.	
	44	**Finding 97** - ISRA Schedule of three years is more than adequate considering the estimated scope of work outlined in the workplan and any extension of the compliance schedule would be inappropriate.[4] Please consider our comments as provided within the ISRA workplan here.			The ISRA alters significantly the method used to achieve compliance at the Santa Susana Field Laboratory. Time will be required to evaluate the data available, complete data gap sampling, define impacted areas to be addressed, review potential actions, select action, and implement action. The Expert Panel will be utilized to work cooperatively with the ISRA team to develop and implement ENTS to address sediment control in the disturbed areas. During the initial rainy season after implementation of the ISRA the data collected will provide information regarding any additional contaminants that may have exceedances.	None required.
	45	Effluent Limitations as stated for outfall 11 are for stormwater only even though this area traverses the Area 1 Burnpit which is currently unlined and received and burned toxic waste at this location for decades and this area not has undergone several interim measures and most recently - December, 2008 a radiological scan conducted by DHS revealed Radium			Staff is aware of the radiological scan and the subsequent findings at the Area 1 Burn Pit. However, monitoring of discharges from Outfall 011 have not resulted in exceedances of the numeric effluent limits included in the permit for radionuclides. This data indicates that the radionuclides present in the area are not mobilized by the storm water traversing the area at concentrations that exceed the effluent limitations.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		as levels above background. This finding has not been adequately explained or dealt with, and therefore must be considered in this context.				
	46	Effluent limits should NOT be limited to wet weather discharges as the polluter has the ability to release water at any time and has been found to do so in the past through sprinkers for "aeration".			The effluent limits apply to all discharges from the outfall. The Discharger has indicated that discharges from Outfalls 001 through 014 only occur during rain events. Aeration operations that have been observed by Regional Board staff did not result in a discharge through the outfall. During the aeration operations observed water was sprayed up into the air and allowed to fall back into the ponds or a small motor was used to mix the water in the pond. Outfall 019 is the only outfall that has the potential to discharge during dry weather since it will be effluent from the groundwater treatment unit. However, the treatment unit is not yet online and is not scheduled for completion until late 2009.	None required.
Christina Walsh comments on the ISRA						
	47	First, we would like to emphasize the importance to include all COPCs and not just those indicated in the recent violations of the permit at outfalls 8 and 9. The violations represent only a fraction of what might be included in the stormwater runoff exiting the site at these locations, as the sampling only takes effect once per storm event at best.			The Discharger has proposed utilizing the recent violations to select areas for action. Once an area is selected for action an evaluation of the entire data set, including all COPCs, available for the area will be evaluated.	None required.
	48	We are extremely concerned to see a change in the estimated percentage of stormwater runoff that leaves the site. Currently it states in this workplan that 60% exits at Bell Canyon to the LA River. The reason this is of concern is because it states so when the stormwater			Modifications to the percentages of flow are the result of more recent modeling and monitoring. Flow gauges have been installed at most of the outfalls, thus the more recent data provides the best estimates available.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		run-off in question in this workplan is Happy Valley, which drains to Dayton Canyon and the outfall 9 to the north, which drains to Simi Valley. In previous reports it was stated that 90% of the stormwater runoff exits the property to either Bell or Dayton and eventually the LA River. This would indicate that 30% of the site runoff exits the site via Dayton Canyon and Happy Valley. This is specifically the location of a proposed real estate development Centex Homes Sterling Estates at Dayton Canyon, of more than 150 homes.				
	49	Currently the ponds on the site are drained and being trucked off-site and the movement of water from pond to pond is done at will, in either direction.			Comment noted. Staff is aware that some storm water management occurs onsite. This is done to ensure that the maximum amount of storage is available for storms that may occur. If the Discharger chooses to dispose of the storm water runoff at an approved disposal facility that is acceptable. They are required to report any offsite disposal in the quarterly monitoring reports.	None required.
	50	We appreciate the objective of this source removal action as part of the equation that leads to exposures to people and the environment is time. By reducing the time that these harmful materials sit in these drainages, being mobilized at every storm event, we are then able to reduce the impacts of these past operations.	X		Staff concurs.	None required.
	51	It must also be noted that they have not had "violations" since the CDO was issued despite the fact that exceedances continue to occur. Use of Benchmarks is inappropriate as the reduction of regulatory consequence will result in the burden of higher risk for the public. This is clear and has been the case, every step of the way and it is only by the strength of the	X		Staff agrees that the implementation of benchmarks removes the incentive associates with the fact that each violation results in a minimum fine of $3,000. However, exceedance of a benchmark also has consequences. After two exceedances at the same location the Discharger must evaluate and upgrade or replace the BMPs. During the three year time schedule implemented in the proposed CDO the Discharger is also required to move swiftly to	

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		waterboard regulatory efforts that we have promising plans for remediation and a more protective result for the aquifer and surrounding environs. This is not the time to remove the motivation to get this right, of regulatory consequence if those mandates are not met. A long time-line to 2012 is too long, and puts the risk back on the public.			satisfy the requirements of the ISRA Order.	
	52	As I read the organizational structure of the report and begin to look at exceedance history, it is clear that we cannot base a "plan for removal action" solely on the exceedances as described: A total of 20 samples from outfall 8 have been collected from 2004 to 2008, and a total of 31 samples have been collected from outfall 9. This limited sampling analysis data has limited statistical meaning and does not adequately describe the contents with regard to all constituents of potential concern at the site. Considering this sampling data-set as described includes four rainy seasons, it should be considered that 5-7 samples per year for such a large watershed with so many point-source areas contributing, that 5-7 samples can not possibly be statically representative of the potential problem which is what we are here to measure. This is also demonstrated by the presence of other contaminants in surficial soil samples as well as groundwater samples within the same area that show many other dioxin congeners than those described here, and at much higher			The number of samples stipulated actually provides a robust data set. Reasonable potential analysis can actually be performed on one sample, however we prefer to have at least 10. Both Outfall 008 and 009 have more than 10 samples.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		concentrations in areas that contribute to the outfall 9 watershed in particular. If the sampling to determine what the necessary removal action will be for dioxin, then all the violation samples should also be included as this report does not demonstrate sampling activities for dioxin contamination delineation				
	53	While it is stated that only the northern portion of the A1LF contributes to the outfall 9 drainage, it should be noted that there is drainage underneath the landfill that also comes from the Building 359 area including seeps that may mobilize the contents of this landfill at several depths. This is the location of the highest and what appears to be the only sampling indicated for dioxin at the site.			Comment noted. All priority pollutants, as well as other Basin Plan criteria, and other chemicals of concern are analyzed for in discharges from Outfall 009. The constituents demonstrated RP are included in the permit with more frequent monitoring and effluent limitations.	None required.
	54	With so few samples taken over the course of several rainy seasons, it is inadequate to sample only for the COC's showing elevated levels as identified, the data set is comprised of copper, lead, and dioxins within Outfall 008, and cadmium, copper, lead, mercury, and dioxins within Outfall 009. All COPCs should be considered here as the wider suite of sampling shows additional COPCs not named in the list of exceedances. 1) Nickel, VOCs, thallium, silver, PCBs, SVOCs, PAHs, Chromium, TPHs, zinc, arsenic, cadmium, selenium, barium, mercury, cobalt, molybdenum, vanadium, bezidine, Cesium-137, Strontium-90, thorium, gross alpha, and gross beta should be listed and evaluated.			The COCs showing elevated levels are used to target areas to be addressed utilizing the ISRA Order. Once the areas are identified, the entire data set for the area will be evaluated to determine additional contaminants of concern and to assist with delineation of the affected area.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
	55	During the CAO and ISEO on the Northern Drainage, dumped asbestos was found in the creek itself, as well as PAHs TPHs which are not listed here. These were specifically found at high levels in outfall 9 drainage in addition to the finding of more than 1100 squib and other igniters buried in the creekbed, under an oaktree.	X		Staff concurs. A finding documenting the ISEO will be added along with information documenting the contaminants identified and the most recent data collected in the vicinity of the action.	Finding to be added to the CDO.
	56	In addition, a radiological screening using the protocol/procedures developed by Mr. Hensley, formerly of CDPH for Area 1 Burnpit should be used here as well to understand any radiological impacts that have not been previously identified. We would like to emphasize the importance of implementing the radionuclide screening general procedures as approved by CDPH for all areas related the ISRA as offsite and onsite burial of material was common practice and the 360 degree study promised by Boeing will not be completed in time for this removal action though some of the deposited contamination in surrounding areas on and offsite, may contribute to the water quality violations we've seen here. Due to the timing constraints with the characterization reports within the RCRA process will not be submitted for all the areas related to outfalls 8 and 9 in time, the importance of looking for all COPCs and erring on the side of caution with regard to worker protection.	X		Staff concurs. The Discharger will be required to implement the protocol used by DTSC in the Northern Drainage area during implementation of the ISRA Order.	None required.
	57	Unlike previous removal actions, much of this work, is being done by contracted workers that			Comment noted. Board staff will review the Health and Safety Plan developed for the field work and ensure that	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		are not related to the site and therefore may not know the background of the site. Site history is critical to the protection of the workers. Please require that the RPs to provide all workers that do any remediation work at the site, a complete copy of the NPDES permit executive summary including historical and regulatory background and site history.			the background information provided includes the background information included in the NPDES permit.	
	58	The data-set as described, is too limited when looking only for copper, lead and dioxins when perchlorate is a known point-source for outfall 8 and has been found down-stream off-site at staggering amounts in Dayton Canyon (62,000,000 ppb) that has to-date not been adequately explained or investigated.			The COCs showing elevated levels in storm water discharges are used to target areas to be addressed utilizing the ISRA Order. Once the areas are identified, the entire data set for the area will be evaluated to determine additional contaminants of concern and to assist with delineation of the affected area. Perchlorate has historically demonstrated reasonable potential at Outfall 008. Data collected after the completion of the interim measure initiated in 2003 has not exceeded the effluent limitation for perchlorate. The ISRA only addresses the watersheds associated with Outfalls 008 and 009 at the Santa Susana Field Laboratory.	None required.
	59	In the example of the data-set included for Outfall 9 for the Northern Drainage, the acknowledgement of other COCs present and contributing to the surface water runoff due to the Area 1 Landfill is appreciated, but since this area has been poorly documented as to the contents, and the recent unexpected findings such as buried igniters, radium and the burnpit in Area 1 and as well as the multiple disposal areas recently discovered and under investigation and remediation under			Comment noted. The runoff from the LOX plant flows offsite via Outfall 009. Therefore, data collected at that outfall will include any contaminants coming from that area.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		the ISEO under DTSC for the Northern Drainage and the CAO for the same area following the finding of buried COCs such as asbestos, antimony, PAHs, TPHs, and the very high VOCs concentrations found in soil-gas sampling in the Northern Drainage LOX Plant area should be considered as well, as possible contributors to the contaminants leaving the site via surface water run-off.				
	60	It is understood that the background data-set used for comparison purposes is not based on SB990 standards as that background study is currently underway but will not be completed in time to be of use within the scope of this workplan. We would like to emphasize the importance of the review of the new background data, as it becomes available with possible amendments as warranted as soon as feasible so that the characterization/ delineation process can continue to move forward in a protective manner.			The activities associated with the ISRA are interim actions. When the new background data is available and Boeing proceeds with its site wide assessment and cleanup under DTSC oversight the watershed areas of Outfalls 008 and 009 will be included in that analysis.	None required.
	61	While it is understood and appreciated that this effort take place now, to shorten the time that these contaminants have to be in the environment with potential exposure pathways to people, wildlife and our precious aquifers that need protection, these current removal activities are specifically related to outfall 8 and 9 respectively, the approach to a removal action for these areas should be based on an analysis of all related COCs that makes sense based on what has been seen in historical sampling for all contributing operational areas.			See response to Comment 58 above.	None required.
	Comments by Committee to Bridge the Gap					
	62	The Santa Susana Field Laboratory (SSFL) is			Staff agrees that the Santa Susana Field Laboratory is	None

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		a heavily contaminated nuclear reactor and rocket and missile testing facility located on the boundary between Los Angeles and Ventura Counties. The site of one of the only reactor meltdowns in the world, SSFL was home to approximately ten nuclear reactors, a plutonium fuel fabrication facility, a "hot lab" for cutting up irradiated nuclear fuel, munitions development, testing of "Star Wars" laser systems, and approximately thirty thousand rocket tests. A history of disregard for environmental rules and procedures led to widespread pollution of surface water, groundwater, and soil, and releases to the air. Hazardous and radioactive wastes were routinely burned in open-air pits; toxic materials were discharged directly into the soil; there were spills, accidents, and a whole host of other releases. The facility sits on a plateau in the Santa Susana mountains, overlooking Simi Valley to the north and the western San Fernando Valley to the east. Surface water leaving the site is contaminated with numerous pollutants. Boeing has been cited for hundreds of violations of its NPDES discharge permit, and has failed to come into compliance. Violations continue to this time unabated.			contaminated. The contamination present onsite is the result of past operations including nuclear reactor testing and operation, rocket engine testing and associated operations as well as other research and development operations. Testing of surface water, including both wastewater and storm water runoff has yielded exceedances of applicable water quality based effluent limitations. Contamination at the site in groundwater, surface and subsurface soils has resulted in a RCRA assessment and cleanup that is proceeding with DTSC oversight. The contaminants onsite in many cases are included in the list of contaminants resulting in exceedances of the water quality based effluent limitations included in the NPDES permit. The most effective way to address these exceedances is removal of the contaminated soil. The schedule for a complete assessment and remediation at the site extends out to 2017. The question is in the interim period, how the Discharger addresses the exceedances that continue to occur in the discharges to surface water. The ISRA provides a mechanism to address exceedances to the NPDES permit and the transport of contaminated stormwater from the areas beginning immediately and culminating in 2012.	required.
	63	The lack of transparency and balance in the process has contributed to the community despair. Boeing submits to Board staff proposals for weakening standards. There are			The NPDES permitting process is the same for each discharger. The permittee submits a Report of Waste Discharge (ROWD). The ROWD is reviewed and evaluated for completeness. Once the ROWD is	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		closed-door meetings and/or conference calls between the polluter and regulator. The Board staff then issues "tentative" orders. (There is no comparable process for the public, those affected by the releases, to propose in this order-drafting stage, to have its suggestions for *strengthening* the permit taken into account.) The public comment opportunity is essentially after the fact—after the polluter and regulator have secretly negotiated an agreement. The comment process is largely *pro forma;* the staff has already decided, in its meetings with Boeing, and has issued its recommended orders, and after-the-fact public comments are just a procedural nuisance one has to go through which virtually never produces much substantive change. Staff merely "responds" to the comments—which are, after all, by the nature of this process a criticism of the document staff has already prepared—by defending what it has done.			considered complete the permit writer begins the process of drafting the permit, if it is a new discharger, or updating the permit if the ROWD is for a renewal. During the permit development process the permit writer secures the required information for the basis and utilizes applicable regulations, policy, and precedential decisions to develop the tentative order. The discharger and the public all get to see the tentative permit at the same time. There is a thirty day comment period and a subsequent response to comments with any required updates to the Order prior to Board consideration. The Regional Board at the Board Hearing can accept or deny any staff recommendations.	
	64	Source removal and ENTS construction would not be required to be completed until 2012, and if insufficient, modified over the years to come. During that time, the draft CDO states, the enforceable limits that currently take effect in June of this year would instead be converted into non-enforceable benchmarks. The illogic in this is demonstrated in item 2 on page 8 of the draft CDO: "Exceedance of benchmarks triggers an evaluation of the BMPs in place with the potential for upgrading or replacing the BMPs (See Section II.C.7 of Order 2009-00xx)." But there are no BMPs in			The term non-enforceable is not actually true for the benchmarks. The benchmarks are enforceable with a requirement after two subsequent violations at the location, the Discharger must re-evaluate the BMPs in place and upgrade or replace them as required. Some of the BMPs implemented at Outfalls 008 and 009 during the compliance schedule established for the ENTS and concurrent with the remedial activities ongoing in the Northern Drainage, part of Outfall 009. include waddles, hydromulching, and hydroseeding. They have also utilized other sediment control BMPs and storm water BMPs throughout the site.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		place at these outfalls. That is the whole point. Boeing has proposed not installing BMPs but instead constructing ENTSs there—and hasn't done so. This order would not require them to be constructed until 2012. So exceedances before that time can't result in evaluation of and improvements to BMPs; there aren't any and won't be any.			This protocol for evaluation and update of BMPs has been implemented at Outfalls 008 and 009 as well as at other outfalls with benchmark effluent limitations. The documentation of the execution of the protocol is outlined in the quarterly self monitoring reports and in the annual reports.	
	65	This is outrageous. The Board in its 2007 CDO concluded that the shortest time practicable is by June 2009. Boeing has had years and years to come into compliance with the limits, going back well before 2007. It has known for years it was obligated to come into compliance. It has simply refused to obey. And now that it has completely failed to comply with the 2007 CDO – it hasn't even begun construction of the promised ENTSs – Board staff propose to once again excuse Boeing failure to obey prior orders by having the Board issue a new order simply extending the waiver of compliance another three years. Is there any reason to doubt why the community despairs so?			The 2007 CDO was developed utilizing the assumption that Engineered Natural Treatment Systems (ENTS) would be utilized to treat the runoff from Outfalls 008 and 009 to meet the final effluent limitations. The NPDES permit is issued to Boeing. However, Boeing is not the only property owner affected. The National Aeronautics and Space Administration (NASA) is also a property owner at the Santa Susana Field Laboratory. NASA owns land that is part of the Outfall 009 watershed. As the ENTs project developed the public voiced concerns regarding its implementation, the possibility of the structures mobilizing contamination and the ability of the treatment systems to treat the runoff to meet the final effluent limitations. These concerns were also echoed by NASA representations. They were also concerned that the ENTs provided only a temporary remedy. Regional Board management in an effort to address these concerns on December 3, 2008, issued a Section 13304 Order for the Interim Source Removal Action at the Watersheds of Outfalls 008 and 009. This order provides the mechanism to remove the sources of contamination that are contributing to the exceedances in the surface water runoff. The removal of the soil requires time. Staff has made an effort to obtain the shortest time practicable	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
					to complete the effort.	
	66	The existing CDO requires compliance by 10 June 2009 – in effect, by the first rains of fall. Boeing has sat on its hands and done nothing to comply. It has neither built the promised ENTSs nor done source removal – which it could have done at any time, not having to wait for an order to do so. It knew it was under an order to comply by June 2009, and it simply refused to do so, presuming that the Board would back done and once again extend the waiver of the enforceable limits.			The Discharger has completed a number of tasks associated with 2007 CDO (Order R4-2007-0056). The tasks enumerated were: Assemble an Expert Panel who will be required to: • Review site conditions, modeled flow, contaminants of concern, and evaluate the BMPs capable of providing the required treatment to meet the final effluent limits. • Provide a description of the BMPs to be utilized . • Design the BMPs and develop a plan for implementation. • Oversee implementation of the BMPs. • Review data to evaluate effectiveness of BMPs • Update or replace as required. The Expert Panel has performed the task enumerated in the first three bullets and provided recommendations to the Regional Board. The Expert Panel has also completed implementation of the first phase of the BMP implementation. This phase included culvert modifications to slow the speed of runoff to allow sediment and contaminants to drop out prior to the flow reaching the respective outfalls.	None required.
	67	RECOMMENDATION: The Board should decline to issue the new CDO. It should simply keep in place its existing CDO. If Boeing violates it, the Board should enforce it. At minimum, that would create some incentive for Boeing to finally come into compliance			Staff disagrees. The requirements included in the CDO and in the WDR forces the Discharger to take all practicable steps to protect the downstream populations during the cleanup.	None required.
	CBG Waste Discharge Requirements ("WDR", Revised Tentative)					
	68	After releasing the tentative new CDO, with its			The tentative requirements did include a three year period	None

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		3+ years of compliance waiver, staff apparently realized that such a period violated the Statewide Implementation Plan (SIP). The SIP bars compliance periods extending beyond 17 May 2010. To get around that difficulty, staff revised the tentative WDR to make the effluent limits for Outfalls 8 and 9 into mere "benchmarks" through 17 May 2010 (p. 44, bottom), and then threw in a reopener provision permitting the Board to revise the deadline if Boeing fails to comply with it! In other words, the 2010 deadline in the revised tentative WDR is put in with a wink and a nod, to get around the SIP requirement, and a mechanism put in place to extend it through to 2012.			when the final numeric effluent limitations are treated as benchmarks which are defined in Finding 88, paragraph five. Staff believed at the time, that since the benchmark was defined within the Order the inclusion of the criteria and the duration of its effect was permissible. After review by management and legal counsel, staff was instructed to limit the schedule based on the SIP. Staff at that time and continues to believe that the three year time period proposed is the shortest practicable time period for the activities associated with the ISRA. Therefore, even though the WDR includes a compliance schedule that terminates on May 17, 2010, the revised tentative Cease and Desist Order includes the full three year compliance schedule that concludes on June 26, 2012. The Discharger has provided case law that supports the inclusion of the entire period in the permit. See comment #1 above. The case assumes that the benchmarks or BMP based effluent limitations are the final effluent limitations for the discharge. Staff does not intend for the benchmarks to act as the final effluent limitations but as the interim requirements in the Order. Therefore, the schedule included in the WDR complies with SIP requirements and the schedule included in the CDO includes the full three year staff recommended compliance schedule.	required.
	69	Indeed, the CDO says 2012, not 2010. And by putting in a long list of things that must be done, and a finding that compliance before 2012 is not practicable, staff places the Board in a potentially untenable legal position. If it enforces the 2010 date in the WDR, Boeing can claim that the Board in the CDO set the deadline as 2012 and found that no earlier date was practicable. The contradiction between the CDO and the WDR is an eruption			The CDO as well as the WDR includes the basis for the proposed schedule for implementation. The WDR in Finding 97 the second paragraph states that "The Regional Board has determined that the shortest practicable time extends from June 10, 2009 through June 27, 2012." It also explains what staff believes are the limitations to including that compliance schedule in the permit. Since the combination of the benchmarks and the effective time period together constituent a compliance schedule not the final effluent limitations, staff believes that the SIP limits the	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		waiting to happen. We urge removal from the WDR of any conversion of requirements for Outfalls 8 and 9 being made into benchmarks, for any period.			schedule within the permit such that it must end on May 17, 2010, ten years after the adoption of the SIP. However, that limitation is not applicable to compliance schedules included in the CDO. Therefore, the CDO includes the full three years recommended by Regional Board staff. The inclusion of the time schedule in the WDR protects the Discharger from third party suits. The inclusion of the schedule in the CDO only does not.	
	70	A number of other outfalls are treated via benchmarks rather than enforceable limits. We oppose this generally. (We note that this is done far beyond the limited direction from the State Board regarding two outfalls it viewed—erroneously we believe-- as potentially redundant.)			Those outfalls that had benchmarks in the previous Order (R4-2007-0055) continue to have benchmarks in this Order. This is done at Outfalls 001 and 002 because of the double counting issue that was raised during the evaluation of the appeal by State Board and the subsequent Remand (Order WQ 2006-0012). The data evaluation shows that the same constituents that are demonstrating reasonable potential at Outfalls 011 and 018 are demonstrating reasonable potential at Outfalls 001 an 002, the downstream outfalls. Outfalls 012 through 014 have benchmarks because they are currently storm water only locations where the discharge was historically wastewater. These outfalls are also located upstream of Outfall 011, downstream of Outfall 014, and Outfall 18, downstream of Outfalls 012, and 013. Benchmark exceedances result in evaluations of the BMPs in place and upgrades or replacement of the BMPs.	None required.
	71	And even for outfalls where there are some enforceable limits for some constituents of concern, a great many other contaminants have no enforceable limits at those same outfalls. We object to this as well.			Only the constituents that demonstrate reasonable potential are included with numeric effluent limitations. Board staff is aware that in many cases the result is the numeric effluent limitations included in the permit is only a subset of the actual list of chemicals of concern present in surface soil, subsurface soil and groundwater onsite.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
					Since the entire list of chemicals of potential concern onsite have not demonstrated statistical reasonable potential staff does not agree that they should be included with numeric effluent limitations.	
	72	The order gives to Boeing the power to do the "Reasonable Potential Analysis" (RPA). We object. The polluter, with a vested self-interest in the outcome, should not do the RPA.			The Order requires the Discharger to perform a RPA. The Regional Board during a previous hearing included the requirement since there is no full time NPDES staff assigned to the site. Staff reviews the analysis and performs a separate analysis prior to making recommendations regarding the inclusion or deletion of specific limitations from the permit.	None required.
	73	Even with the benchmark leeway, the order lets Boeing exceed the benchmarks without evaluating how to improve the failing BMPs unless the same constituent exceeds the benchmark at the same outfall for two consecutive sampling events. We object to this as well.			The protocol enumerated for the evaluation of the BMPs after exceedance of a benchmark is the protocol utilized in other storm water permits. That same protocol was included in the MS4 permit adopted by this Regional Board on July 27, 2000.	None required.
	74	All pollutants potentially found at SSFL should have enforceable limits. There should be no use of unenforceable benchmarks.			Staff disagrees. The constituents with reasonable potential based should and do have enforceable effluent limitations. Staff also asserts that a benchmark is indeed an enforceable effluent limitation. It is simply not enforceable utilizing a fine, but exceedances of benchmarks require an evaluation of current BMPs in place and upgrades or replacement BMPs as appropriate.	None required.
	75	On page 40, fn 1, requires no more than one sample per week during extended rainfall and that a storm must be preceded by at least 72 hours of dry weather. We object. This permits violations for many days counting as a single violation, and exempts different rain storms if they are less than three days apart. Violations, and penalties, should be for each			The sampling protocol established based on requirements included in the USEPA NPDES Storm Water Sampling Guidance Document. The document provides specific guidance for storm event criteria in Section 2.7.1 of the document. The type of storm that must be sampled: • The depth of the storm must be greater than 0.1 inch accumulation	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		day of a violation, and all storms should be included.			• The storm must be preceded by at leas 72 hours of dry weather • Where feasible, the depth of rain and duration the event should not vary by more than 50 percent from the average depth and duration. Staff has implemented the guidance provided by US EPA.	
	76	The 50 pCi/l limitation for gross beta radioactivity is contradicted by the Monitoring and Reporting Program which sets the limit as 15 pCi/l after K-40 is subtracted. Further, the latter expressly assumes all K-40 is natural. SSFL used sodium-potassium (NaK) coolant in its reactors and K-40 may well have been generated by the reactor operations.			Staff disagree. The effluent limitations for the radionuclides are reflective of standards included in the Los Angeles Region Board Basin Plan. The monitoring protocol outlined in the footnote is reflective of recent changes by the California Department of Public Health (DPH) to their recommended sampling and analysis requirements. The specifics of the sampling protocol were provided by staff from DPH.	None required.
	77	Outfalls 3-10 have far fewer enforceable limits than Outfalls 11, 18 and 19, which in turn exclude too many constituents. The full set of potential contaminants at the site should have enforceable limits at all outfalls. And even for outfalls 3-10, a number of the constituents are excluded from enforcement at all but outfall 8, and of course, outfall 8 is proposed to be waived from enforcement altogether.			The effluent limitations included for each group of outfalls is based on the data collected from those outfalls.	None required.
	78	The EPA priority pollutants required to be monitored for are at the same time excluded from enforcement, with the exception of some specifically named.			Only the priority pollutants that demonstrate reasonable potential are given effluent limitations. This protocol is based on the State Implementation Policy.	None required.
	79	We object to the limits for Outfalls 12, 13, and 14 being converted to benchmarks. Even so, the list of constituents that will have benchmarks is very short compared to what should be addressed. (Note for example, no radioactivity benchmarks, despite evidence of radioactive use and contamination potential			The limits at Outfalls 012, 013, and 014 were originally designed to regulate discharges associated with ongoing operations. In 2006, those operations were terminated. Subsequently, these outfalls have been regulated with benchmarks since there are no facility operations ongoing and they are located upstream of other outfalls that have numeric effluent limitations. Outfalls 012 and 013 are	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		outside Area IV.)			upstream of Outfall 018, and Outfall 014 is upstream of Outfalls 011.	
	80	The conversion of enforceable limits for Outfalls 8, 9, 12, 13, and 14 constitute impermissible backsliding.			See response to comment 79 above. Outfalls 012 through 014 have had benchmarks which are enforceable limitations since the operations at these locations terminated. The limits (benchmarks) have remained the same, there is no backsliding issue. Outfalls 008 and 009 have been provided a compliance schedule. The numeric effluent limits that were historically applicable continue to be applicable, there is no relaxation of the limits. The only change is the way that the limitations are enforced. Enforcement of the benchmark is achieved utilizing modifications in the BMP program and upgrades to the BMP as required based on exceedances of the numeric effluent limitations.	None required.
	81	The order indicates an RPA was conducted and concluded that no additional pollutants should be included in any of the limits. The RPA has not been made public, despite my request; it is impossible for the public thus to ascertain whether it has been done appropriately.			Previously because no new constituents demonstrated reasonable potential, staff had not issued the spreadsheets. However, since you have requested them, staff will provide them for your review.	None required.
	82	We continue to object to the Board's refusal to employ Best Professional Judgment (BPJ), as permitted under the SIP, to include pollutants known or likely to be at the site.			One utilizes BPJ when the data is not available to make a decision. Monitoring at the SSFL has provided a robust data set. That data set along with other information has been used to establish numeric effluent limitations at the site.	
	83	We object to item 6 on p. 46, which provides another loophole from enforcement.			The NPDES permit for the Santa Susana Field Laboratory has been a collaborative effort with the other regulatory agencies with oversight responsibilities at the site. During the development of the permit originally adopted by this Regional Board in 2004 staff and management from the Regional Board meet with staff and management from	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
					DTSC to talk about the responsibilities of each agency and how to increase communication and cooperation at the site. The discussions resulted in the development of this finding which has been included in each permit adopted subsequently. In an effort to ensure that activities at the site by both agencies work together, staff believes the requirement continues to be important.	
	84	We object to the methods for determining monthly averages, for example the median value when one or more sample results are reported as ND.		X	The method as enumerated in the Compliance Determination is part of the standard procedures utilized to evaluate all NPDES data. It is important that the protocol for evaluating the data be consistent across dischargers.	None required.
	85	We object to the benchmark response description on p. 54. Since the BMPs clearly aren't even working now – violations of enforceable limits at outfalls with BMPs installed – the reliance on BMPs without enforcement of limits is ill-conceived. We object in item a also to setting a BMP compliance report due date as 60 days after the second reported exceedance of a benchmark. This is bad enough for monitoring done on a per discharge basis (requiring two consecutive exceedances before reporting or undertaking analysis makes no sense), but some sampling is only annual, so the second exceedance would be a year later, before any reporting.		X	Staff disagrees. Finding II.C.7. which begins on Page 53 has not been changed from the current Order. The protocol as outlined is consistent with the protocol implemented for upgrades to the BMP plans in the MS4 adopted by the Regional Board on July 27, 2000. Constituents with benchmarks are monitored once per discharge event.	None required.
	86	We object to 8 on p. 55, whereby once they have reported a double exceedance of benchmarks, they need not take any further action when there are further exceedances.		X	Two exceedances indicate that the BMPs in place are not effective with treating the discharge. Subsequently, it is imperative that the Discharger begin to focus on evaluation of the BMPs, upgrading them, and/or replacing them. Once the BMPs have been upgraded the process begins again with the evaluation of the contaminant	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
					concentrations associated with the upgraded BMPs.	
	87	We object to many of the reopeners. We object to the entire concept of design storms for compliance purposes (item D). We object to further weakening the remaining enforceable limits by consideration of dilution credits or a mixing zone (item F). We strongly object to waiving enforcement and limits while DTSC revises corrective action requirements of permits. If Boeing violates effluent limits, the Board should enforce those limits, not add more and more ways to avoid enforcement. We particularly object to item J, which seems to set up a mechanism to encourage Boeing to fail to comply with the source removal order, the result of which would be potentially to extend its period of exemption from enforcement.		X	Staff has not implemented the design storm as recommended by the Discharger. However, staff supports the use of the design storm as defined by the Expert Panel to design BMPs.	None required.
	CBG Monitoring and Reporting Program					
	88	As indicated above, we object to the sampling protocols for long storms or storms that occur less than 72 hours from a prior storm (fn 1, T-6).		X	The monitoring protocol stipulated is recommended by USEPA in the NPDES Strom Water Sampling Guidance Document.	None required.
	89	We note that the WDR states, as does the current WDR, that "Sampling shall be during the first hour of discharge or at the first safe opportunity." This is to get the first flush, and not take a sample late in the rain event where the level may be diluted. Boeing has consistently violated this requirement. As a matter of practice, it never takes samples during the first hour of discharge; this was revealed at a meeting of the so-called expert panel. The Board has failed to enforce the	X		The requirement states that the sample should be collected during the first hour of the discharge or at the first safe opportunity. Interested parties who have visited the site are aware that the terrain which within some of the watershed areas is very steep and treacherous. Consequently, it would be irresponsible to force employees to sample in the middle of the night during the first hour of the discharge. However, the implementation of composite sampling for a number of constituents would address your concern as the	Update Monitoring and Reporting Program.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		requirement. We are very troubled this.			use of automatic samplers facilitates sampling at any time that the rain event begins. Therefore, staff will update the MRP to recommend that the Regional Board allow composite sampling for a number of constitutes.	
	90	We object to all of the frequency of analysis set at annually. The chance of catching contamination with one sample per year is ridiculously small.		X	The monitoring frequency is developed based on the historic contaminant concentrations detected exiting the watershed. Contaminants with elevated concentrations relative to the applicable water quality based effluent limitations are monitored during each discharge. Contaminants that are present below those levels are monitored less frequently. Since the discharges from the Santa Susana Field Laboratory only occur during rain events, the frequency of the rain events determines the number of samples collected at the facility.	None required.
	91	Footnote 5 on T-8, as indicated earlier, contradicts the WDR by setting the gross beta limit at 15 pCi/L after subtracting K-40; and assuming all K-40 is natural. We object also to the part of the footnote setting the limits as annual average. The WDR sets these as daily or monthly averages. Permitting averaging over a year is inappropriate, allowing some high readings to go without enforcement or even response to benchmarks. The sentence also makes no sense, as it says the frequency of sampling is increased to once per discharge, but the table already sets the frequency of sampling as once per discharge event.		X	Footnote 5 does not set effluent limitations. It provides specific criteria on which to base the analysis completed. This protocol was provided by staff from the California Department of Public Health (DPH), the agency with guidance regarding radionuclides in drinking water. This criteria is included in the Basin Plan and thus it is included in the permit as effluent limitations. Since the criteria are developed by DPH the monitoring protocol that is used there is most appropriate to evaluate compliance. Hence, the footnote prescribes the protocol that DPH utilizes.	None required.
	92	We object on p. T-9 to having some of the constituents only monitored at Outfall 8. We object to requiring only semiannual monitoring for perchlorate at all outfalls other than 8 (fn 7). We object also to the short list of constituents for Outfalls 3-10 to be monitored			Outfall 008 flows to Dayton Canyon Creek and subsequently to Bell Creek a tributary to the Los Angeles River. The constituents that are specified for Outfall 008 only are constituents that have criteria specific to Los Angeles River and tributaries thereto. Outfalls 003 though 007, 009 and 010 flow to Arroyo Simi a tributary to	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		for. All outfalls should be monitored for all pollutants potentially present at SSFL, and on a once per discharge basis.			Calleguas Creek. The frequency of monitoring is routinely increased based on the concentration of the constituent detected and whether it demonstrates RP. At the outfalls where perchlorate concentrations have not demonstrated RP the monitoring frequency is less than the once per discharge event established for outfalls where the contaminant has RP.	
	93	Item D on T-10 requires monitoring only during engine test operations. Boeing stated in the ROWD that engine testing has stopped. Staff states in the Fact Sheet that monitoring is to continue at Outfalls 12-14 even though engine testing has stopped because of all the contamination; however item D says the opposite.	X		Staff concurs. The reference to engine test operation should be removed. The monitoring is required during each storm event that generates a discharge.	Page T-10, Item D will be updated to require sampling during storm events that generate a discharge from the area.
	94	On T-11, we object to the requirement to monitor only once a year for acute toxicity and the remaining USEPA priority pollutants. fn 11—asbestos would be monitored for all outfalls, not just 8 and 9.		X	The MRP requires monitoring for asbestos at Outfall 009. Since the asbestos was associated with a specific debris field it is unlikely that it would be present at the other outfalls where there is no debris field present. Monitoring for asbestos at Outfall 009 indicates that it has not been present in the discharges from the area even during the cleanup operations. The Cleanup and Abatement Order No. R4-2007-0054 requires monitoring of the water upstream and downstream of the affected area. The data has not yielded exceedances of asbestos in runoff in the vicinity of the removal action.	None required.
	95	In addition, the monitoring requirements are silent on two key matters. For years and years			The current monitoring protocol implemented via the NPDES permit expressly stipulates that the samples are	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		the community has been concerned about Boeing's practice of filtering water samples before monitoring them. The monitoring requirements should be clear that filtering is forbidden; or if filtering is done, the concentration in the filtered water and on the filter itself should both be measured, and added together.			not to be filtered. The metals are monitored as total recoverable. The Discharger is required to collect the samples using the 40 CFR specified methods, submit the chain of custody documentation, the laboratory analytical data and quality control documentation. Review of this documentation indicates that the samples and analysis meet the specified quality criteria and they have not been filtered.	
	96	Secondly, Boeing has been taking its samples at the pipe outlet from its filter banks in the BMPs. This artificially lowers the result. They are taking the sample from the absolute cleanest place possible. Sampling should occur further downstream and in places where effluent may bypass the BMP.			The sample location is stipulated such that a representative sample is collected after all treatment and prior to it reaching the receiving water. The sample location for most discharges in the region is end of pipe.	None required.
CBG Fact Sheet						
	97	The Fact Sheet is very unfactual. The troubled history of the site, the meltdown, the other reactor accidents, the illegal burning of hazardous materials, the felony convictions for environmental crimes, the extensive contamination – all are slid over.			The Fact Sheet does not include all of the information available about the site. The purpose of the Fact Sheet is to provide the basis for the criteria included in the permit. The background information included provides the basis for the decisions made in the permit with regard to the effluent limitations, prohibitions, and monitoring and reporting requirements.	None required.
	98	On p. 41, the requirement to exceed a benchmark two times consecutively at the same location before triggering even an evaluation of the BMPs is frankly outrageous. It is bad enough to convert enforceable limits to non-enforceable benchmarks, but then to define a benchmark as requiring the same constituent to be exceeded twice at the same outfall in consecutive measurements is hard to reconcile with a duty to protect against releases.		X	Staff believes benchmarks to be enforceable limitations. Staff also believes them to be protective of the public in that they provide an assessment of the quality of the discharge and a protocol for implementing upgraded BMPs until the discharge is in full compliance with the final effluent limitations.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
	99	P. 44 states that a reasonable potential analysis was completed. It does not say by whom – Boeing or the Board staff. It gives no detail whatsoever, just two general sentences. And the RPA has been hidden from public review; my request to be provided it was declined.			The RPA was not provided since previously when there were no changes staff has not provided the final attachment. However, since the public has expressed an interest in reviewing the final documents, they will be provided for your review.	None required.
	100	The ROWD as posted on the Board's website is incomplete, making review impossible. Pages 9 and 11-12 are missing, for example; pages V-2 to V-5 for Outfall 1 also appear to be missing. And one can't tell from the document whether the attachments cited to the late January 2009 letter correcting various tables have been used to replace the tables in the document or not; they are missing as attachments to the letter. One can't really review the ROWD in this state.			In the process of having the document scanned and posted some of the pages were omitted. Staff will have the document scanned again and reposted. The letter documenting the second submittal from Boeing was included in the scanned document posted. It enumerates the attached replacement pages. Those pages were included in the package prior to staff concluding that the package was complete.	The ROWD will be scanned again and posted on the website.
	101	The proposed WRD, CDO, and Monitoring Requirements are very weak, in large measure a surrender to a power polluter who for years has refused to comply with the Board's requirements. Protection of the communities near this site and the environment more generally requires something much better.			Staff believes the WDR, CDO and Monitoring Requirements provide a permit that protects human health and the environment. It also provides a vehicle for the discharger to address the sources of contaminants that have resulted in chronic violations of water quality based effluent limitations in the watersheds associated with Outfalls 008 and 009.	None required.
	Committee to Bridge the Gap – SSFL Preliminary Interim Source Removal Action Work Plan Comments					
	102	We came away from January meeting with the following understandings: 1. The Board found the very long history of repeated violations at SSFL unacceptable and would tolerate no further delays in coming into compliance.			Comment noted.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
	103	2. Those other outfalls represent the great majority of violations. On 11 June 2008, the Board issued a Notice of Violation (NOV) identifying twenty-four – 24! – violations of the site's discharge permits in a little over a year, from December 2006 to February 2008. (We note that once again, there has been, to date, no enforcement action taken on these 24 violations.) Twenty-one of the violations were for outfalls other than Outfalls 8 and 9. This demonstrates that the Best Management Practices (BMPs) Boeing has touted for the rest of the outfalls are in fact failing to prevent contaminated water at unsafe levels from leaving the site. The problem, thus, is not just Outfalls 8 and 9, for which ENTS are proposed instead of BMPs; the existing BMPs at the other outfalls are not working either. For example, there is a known area of soil contaminated with mercury just above the SRE outfall which has just been left there for a decade or so; is it not to be removed in this source removal?			Staff agrees that Outfalls 008 and 009 are not the only outfalls that have demonstrated problems with compliance with the final effluent limitations. The BMPs implemented at the other outfalls have not resulted in full compliance with the NPDES permit. However, there is the potential for the implementation of engineered treatment systems because of flat open space located within the watersheds. The watersheds associated with Outfalls 008 and 009 are very steep in some areas. The Discharger has indicated that there are few opportunities to implement engineered treatment systems in these watersheds that are capable of treating the runoff. Therefore, these outfalls were targeted for ENTs.	None required.
	104	3. As for Outfalls 8 and 9, the existing CDO, issued in November 2007, requires that releases from them come into compliance by 10 June 2009, allowing Boeing to construct ENTS as a means of reaching compliance, to be implemented by that same date. No ENTS has been constructed, however, nor any source removal conducted, and thus Boeing will be in violation of the CDO at the beginning of the upcoming rainy season. To prevent this,			See response to Comment # 65 above.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		it was our understanding at the meeting that the interim source removal was to be completed before the next rainy season. 4. However, Boeing and NASA propose in their ISRA Work Plan a schedule that has the work extending into Winter 2011 with final implementation reports submitted at some unspecified time thereafter.				
	105	5. Worse even is the proposed schedule by the Board's staff in the tentative revised CDO. The draft CDO extends the date for coming into compliance to 26 June 2012, with report submission on the ISRA and ENTS implementation due 31 August 2012—three and a half years from now.		X	The proposed schedule by Board staff includes time for permitting, analysis of NPDES data and soils data available in the watersheds. Planning and execution of data gap sampling in the watersheds of Outfall 008 and 009, review of the data, and delineation of the affected areas. The Discharger must subsequently select the most appropriate method of dealing with the contamination. The selected remedy is implemented, confirmation sampling completed, the area restabilized, and subsequent storm water sampling completed to evaluate the effectiveness of the remedy. The sampling will provide input to the decision of whether or where to implement ENTs in the watersheds.	None required.
	106	6. Most troubling is that the tentative CDO eliminates all enforceable limits for Outfalls 8 and 9 through June 2012. This is incomprehensible to us. As you know, there has been great concern in the past about efforts to convert enforceable numeric limits into unenforceable "benchmarks." The State Water Board ordered the Regional Board in 2006 to establish a compliance schedule with the shortest possible time. The Board, in its 2007 CDO, established that time frame as ending in June 2009, with the enforceable limits applicable at that time. Now the Board		X	Staff disagrees. Benchmarks are indeed enforceable limitations. Violations of benchmarks require evaluation of the BMPs, modification of the BMP Plan, and after approval, implementation of required upgrades or replacement BMPs. The 2007 CDO provided time for the implementation of ENTs in the watersheds of Outfalls 008 and 009. A complete list of the requirements and the status of each is enumerated in the response to Comment #66 above. The December 3, 2008, Section 13304 Interim Source Removal Action Order issued by Ms. Tracy Egoscue, Executive Officer of the Regional Board, provides the directive for the	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		staff is proposing waiving enforceable limits for Outfalls 8 and 9 for another three years beyond that date. This would appear to violate the State Water Board order and will create a firestorm of concern within the community. And it is at odds with what we understood in our meeting with you – that the Board was tired of Boeing failing to comply, would keep Boeing's feet to the fire, and was requiring immediate source removal so that they would be in compliance with the schedule in the existing CDO; i.e., no more violations or exceedances come the next rainy season.			Discharger to remove contaminated soil in the two watersheds that is contributing to the exceedances of the numeric effluent limitations. Utilizing benchmarks as the enforceable limitations during the time period when the Discharger is executing the removal action provides a small amount of relief during this period. The acceptable outcome is a fully compliant discharge from these outfalls after a short period when the threat of fines are not implemented. The reopener included in the permit provides that at any time that the Regional Board finds the Discharger is not in compliance with the Section 13304 Order the benchmarks can immediately be converted back to numeric effluent limitations with the threat of fines.	
	107	7. In our January meeting, concern was raised that source removal deal not just with the specific constituent causing recent exceedances at a particular outfall, but all constituents of concern. We were given reassurances that that would be the case. However, the ISRA is restricted to source removal for constituents for which there has been an exceedance during the current permit period at the outfall in question. Thus, source removal only appears to be proposed to address copper, lead and dioxin at Outfall 8 and cadmium, copper, lead, mercury, oil & grease, and dioxins at Outfall 9.			The Section 13304 Order clearly specifies that it applies only to the Watersheds of Outfalls 008 and 009. The Discharger will delineate areas to consider for source removal based on the concentrations of contaminants that have been present in discharges for the watersheds at levels that exceed numeric effluent limitations. Once an area of concern is selected an in-depth analysis will be completed to evaluate the other chemicals of concern potentially co-located with the targeted contaminants. During this evaluation the area targeted will be delineated and all contaminants therein will be addressed.	None required.
	108	8. We were also given assurances that the interim removal would be consistent with SB990, the cleanup law for SSFL. However, the ISRA ignores SB990, and relies on RCRA Facility Investigation reports that were based on pre-990 far more lax standards.			The specifications of SB990 are in the development process within meetings attended by the regulatory offices involved, the owners and operators of the SSFL, and a number of stakeholders. The legislation specifies that DTSC is the lead agency for the cleanup at the site. The ISRA is an interim action. It is not meant to be the final	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
					remedial action taken at the site. It is an attempt to control the transport of contaminants offsite and downstream to the neighborhoods as early as possible.	
	109	9. We expressed concern that if there were not close coordination with DTSC, the interim measures ordered by the Board could conflict with the long-term cleanup program under DTSC's jurisdiction. We were particularly concerned that the "interim measures" could become final measures, as appears to have happened with the interim measures at the Area IV sodium burnpit. Given the resistance by the RPs to compliance with SB990, we remain concerned that a poorly coordinated interim cleanup will end up with pressure from the RPs to declare interim work as final, even though it was not to SB990 standards and didn't address most constituents of concern. We also remain concerned – and the ISRA does not address the matter – that the interim measures, if not carefully coordinated, will interfere with the final cleanup. Areas will be excavated and then fill placed on top of them, making difficult the further characterization for contamination that exceeds SB990 levels or involves other constituents of concern. ISRA is silent on how or if soil will be screened to determine if it must go to a hazardous landfill or if instead it will end up as fill elsewhere (on site, a school, a regular landfill, Sage Ranch?) even though it may contain other contaminants or exceed 990 levels. No mention is made of whether the soil will be screened for radioactivity, nor what standards (990?) would be used for such screening. Given past			The Regional Board and DTSC are clear that this is an interim measure, much like the other interim measures undertaken onsite to address perchlorate at Outfall 008 and mercury at Outfall 010. The letter from DTSC to states clearly on page 2, paragraph 5 that: "Finally, we wish to state very clearly that the removal of source materials from the affected watersheds to address NPDES exceedances at Outfalls 008 and 009 will not necessarily mean that those areas will meet Senate Bill (SB) 990 standards upon completion of the CAO-directed work. It may be necessary for Boeing and its SSFL partners to undertake additional removal work at these same locations in the future in order to meet SB 990 cleanup standards to be prescribed by DTSC at a later date. We will not be able to determine whether additional cleanup will be required until we complete characterization of the areas involved and the corresponding human health and ecological risk assessments." The initial work plan submitted on February 13, 2009 is to be refined in the work Plan submitted on May 1, 2009. The specifics of how the soil will be screened and handled will be enumerated in the ISRA Workplan. The protocol to screen the soil to determine the location of disposal will be the same protocol utilized during the cleanup action ongoing in Northern Drainage Area.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		fiascos involving radioactively contaminated waste from the site being sent to local municipal landfills, these areas of silence are of concern.				
	110	10. We remain similarly concerned about the silence regarding coordination with Ventura County. The Regional Board has claimed exemption from CEQA for its orders to Boeing. The County must approve grading permits and CUP amendments for the ENTS, and presumably also for interim source removal efforts. The County has apparently been told by the Regional Board that the County will be the lead agency for CEQA for these efforts at the site. But the actions are being undertaken because of Orders by the Regional Board, and these matters involving chemical and radioactive contamination and effectiveness of various approaches in reducing pollutant levels in surface water runoff are beyond the competence of the County. It seems poor policy for the County to be stuck with lead responsibilities for CEQA review for complex technical issues associated with Orders from the Regional Board.			Boeing is not a new source, as defined in the CWA. (See 40 CFR part 122.2) Therefore, the approval of this permit is not subject to the California Environmental Quality Act (CEQA) as stated in section 13389 of the California Water Code.	None required.
	111	11. Furthermore, the interplay between the Interim Source Removal Order and the Order to put in place ENTS for Outfalls 8 and 9 remains very murky. In one place in the documents it sounds as though it is argued that source removal eliminates the need for ENTS. In the tentative CDO, however, it is stated that the two together are required to reduce the likelihood of violations. The ENTS schedule seems to have been abandoned,			The ENTs originally designed by the Expert Panel was to be located throughout the two watersheds of Outfalls 008 and 009.They were designed to collect and treat the runoff multiple times prior to it reaching the monitoring location or Outfall. With the decision from NASA to not have ENTs on their property many of those decisions for Outfall 009 will have to be reconsidered. The Section 13304 Order which provides the vehicle for source removal in the watersheds provides an attractive option for both watersheds. It also satisfies a number of concerns raised by the public	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		replaced with nothing specific. The Boeing application to the County has been deemed by the County incomplete; Boeing hasn't filed the necessary information to complete it, so it remains in stasis. Is the Board requiring source removal as an alternative to ENTS for Outfalls 8 and 9, or requiring both? If the latter, will the ENTS design be changed in light of the source removal plan? And what happened to the schedule? When are the ENTS to be in place? ENTS were to be up and running now or very soon. Boeing seems to have stopped, but nothing has been made clear about plans for the ENTS or schedule.			regarding the potential for the ENTs to mobilize contamination on the site. It is unlikely that the ISRA will eliminate the need for ENTs. In fact, immediately following source removal ENTs will likely be required for sediment control. As data is collected post implementation of the ISRA it will become clear if the removal action has successfully addressed all contaminants demonstrated RP at the outfall. If there are contaminants in other locations that exceed effluent limitations the ENTs will be used to treat those constituents. This process will likely be implemented throughout the watershed associated with Outfall 008 and in the areas permissible in the watershed of Outfall 009. The application with Ventura County has been deemed incomplete. Boeing initially submitted the application on December 19, 2008. On January 5, 2009, the application was considered complete and ready fro review. During the review process on February 2, 2009 deficiencies were noted. Boeing responded to the request from Ventura on February 27, 2009. On March 26, 2009 Ventura County Environmental Health enumerated additional information required and subsequently on April 1, 2009, a conference call was held to provide clarification. Boeing is scheduled to respond by April 29, 2009.	
	112	12. The role of NASA remains unclear. For reasons we do not fully understand, the CDO and the source removal Order were directed to Boeing alone by the Board, even though the Orders indicate that part of Area I and all of Area II are owned by NASA, and that their areas are both responsible for much of the contamination and that much of the source removal work and ENTS must be done on their			Historically for the NPDES permits, and thus with respect to the subject Order, NASA is not issued the Order because Boeing is the operator of the site. Routinely the process of securing a permit proceeds as follows. The company desiring a permit submits a Report of Waste Discharge. Regional Board staff reviews that ROWD and utilizes the information therein coupled with information obtained during a site inspection and any other	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		land. NASA has verbally stated at a public meeting last year at which Board staff were present that it was refusing to comply with any order requiring ENTS. It would neither pay for ENTS nor even allow Boeing to construct ENTS on NASA property. The Outfall 009 ENTS apparently must be located on NASA property, but NASA refuses. NASA says it prefers source removal. But the Board Orders appear to contemplate both source removal and ENTS. What the Board intends to do in response to NASA's refusal to cooperate on ENTS remains uncertain.			data available to develop a tentative permit for the facility. The applicant for permits at the Santa Susana Field Laboratory most recently has been the Boeing Company. Consequently, the permit has been issued to the Boeing Company. However, the applicant provided supplemental information that NASA owned some of the property and that DOE historically had operations in Area IV. That information has been included in the permit	
	113	13. Even the role of the Santa Monica Mountains Conservancy is in question. We understand that part of the work is intended to be done on Sage Ranch property. Nothing about that is described in the documents released to date. What work? Has the Conservancy approved?			On June 4, 2008, the Boeing Company contacted the Mountains Recreation and Conservation Authority requesting permission to perform erosion control maintenance work at the Sage Ranch Park of the Santa Monica Mounts Conservancy. On September 18, 2008, an approval letter was issued by the agency.	None required.
	114	In short, we had come away from our January meeting with the understanding that the Board would no longer tolerate exceedances; the primary known contamination sources in these watersheds would be removed before the next rainy season; this would apply to all contaminants of concern; it would cover all outfalls where there are exceedances; and this would be done in close coordination with other agencies to assure it didn't interfere in any way with SB990. Instead we learn that Board staff are now proposing to waive all enforceable numeric limits for Outfalls 8 and 9 for more than three			Comment noted.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		years, making them unenforceable "benchmarks"; the interim measures could take until some time in 2012; they would apply only to Outfalls 8 and 9, and only to a few constituents of concern; and this would not comport with SB990 and raises the risk that interim measures that don't comply with 990 could end up permanent or interfere with final cleanup remedies. We presume that what has happened is at variance with what you intended, and that both Boeing/NASA and your own staff have proposed approaches that don't comport with what you want and what you described to us. But we are now in a difficult situation, as the actual proposals are so at variance with what we understood that if they were to go forward as specified, they might interfere with rather than facilitate getting the site cleaned up and public protection finally put in place. We should be clear: we are not opposing the plans as put forward, nor supporting them. We are troubled by them, and their divergence from what we had understood in January they are to be.				
	115	We recommend that you convene a meeting with yourself and your staff, key community representatives, staff of the electeds, and representatives of DTSC and Ventura County, and try to sort out these problems and get the situation back on track.			Comment noted. However, the Regional Board has not yet made a decision regarding the recommendations put forth by staff. During the Board Meeting scheduled on May 7 and 8, 2009, the Board will hear testimony on this item and decide on the appropriate way to work toward full compliance at of discharges from the Santa Susana Field Laboratory.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
William Preston Bowling, Founder/Director Aerospace Cancer Museum of Education						
	116	Commenting on the Background Information section of document Tent WDR R4-2009-00XX on the Santa Susana Field Laboratory (SSFL), it should include the Imminent and Substantial Endangerment Determination and Order (ISEO) and Remedial Action Order (RAO) issued by the Department of Toxic Substances Control (DTSC) dated November 1, 2007.	X		Staff concurs that the ISEO and the actions taken in the Northern Drainage area represent important information that should be included in the proposed CDO which addresses. This is particularly important here because the Northern Drainage Area is included in the Outfall 009 watershed and the contamination removed should be considered when planning additional sampling at the location. I will also include a reference to the ISEO in the WDR.	Update CDO with a finding documenting the ISEO.
	117	Page 22, Item #61 of the Tent WDR R4-2009-00XX should include that storm water runoff drainage from the Department of Energy (DOE) operated facilities of AREA IV are directed into the R-2 Pond and then discharged through National Pollutant Discharge Elimination System (NPDES) Outfall 018 in NASA AREA II which is Bell Canyon Creek, Headwaters to the Los Angeles River.	X		Staff agrees that a portion of the runoff from Area IV exits the site via Outfall 018 and flows to Bell Creek. The fining indicates that discharges from upstream of Outfall 011 exits via that outfall. The discharges from Area IV are included in that statement.	None required.
	118	Page 30, Item #73 of the Tent WDR R4-2009-00XX should be corrected to reflect Millions of Gallons of TCE, from explained uses of TCE on Liquid Oxygen (LOX) areas to the TechLaw report (October 4, 1990 Final Report SSFL Air Force Plant No. 57 Site Operations/Ownership History prepared for the U.S. Army Corps of Engineers, Omaha District) that states the gallons of TCE determined was based ONLY on 8000 rocket engine tests, with numbers documented in various reports over the years as 30,000 to possibly 150 to 200,000 rocket engine tests the volumes of TCE would become a more staggering number. With a major TCE plume			There are a number of references with different numbers for the volume of TCE releases. The Find #73 was crafted by legal counsel during the 2004 Board Hearing and was based on testimony provided during that hearing. Since it appropriately documents the information utilized to make the decision, staff will not update the amount of TCE included in the finding.	

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		that impacts the Outfall 009 Watershed we have to take this into consideration. Also historical data attention is needed regarding prior uses of the B-1 area as a hot fuel research area and the areas surrounding the APTF that prior to draining into the CTL III area drained into the Northern Drainage via pipes and channels (Such As Building 984-Acid Bay, Building 266-Flow Analysis, Building 791- EL Test Cells, Building 359-North American Kindleberger Atwood (NAKA) Hazard Laboratory… …Building 741-NAKA Firing Pit, Building 743-Oxidizer Storage Dock, Building 723-NAKA Chemical Storage, Building 400-Drum Storage and the Gas Flow Facility of Building 373. The TechLaw report also references several releases of TCE through accidental spillage. These numbers should be taken into consideration as well.				
	119	Page 35, Item #90 of the Tent WDR R4-2009-00XX speaks of the 2005 Topanga Fire resulted in significant alterations to the site, let this not sidetrack our goals or give the polluter a free pass as we are protecting the community from the contamination coming off this site no matter in what form a toxin is produced.			Comment noted. The revised tentative permit does protect the downstream communities.	None required.
	120	As noted in page 38, Item #96 of the Tent WDR R4-2009-00XX " The Discharger, as directed by the CDO (Order R4-2007-0056), assembled a panel of experts (Expert Panel) with experience in treating storm water flows utilizing engineered natural treatment			Response to Comment #66 provides an overview of the tasks assigned to the Expert Panel. It also provides an overview of the activities complete to date. NASA in November 2008 made the decision to not allow ENTS on their property. Subsequently, the Regional Board issued a California Water Code Section 13304 Order to Perform	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		systems (ENTS)" If we look back at the LARWQCB Interim Source Removal Action Work Plan (ISRAWP), On Page 3-4 it states "Restoration methods may be defined upon… …consultation with the Surface Water Expert Panel retained by Boeing to support Engineered Natural Treatment Systems (ENTS) proposed within Outfalls 008 and 009." Has the ENTS even yet been approved by LARWQCB or even by the National Aeronautics and Space Administration (NASA) who owns a large portion of this watershed? We also need to keep in mind the amount of Asbestos found during the removal actions of the ISEO and it's RAO and continue looking at Asbestos as a concern.			Interim/Source Removal Action of Soil in the Areas of Outfalls 008 and 009 Drainage Areas to the Boeing Company. Asbestos is included in the list of contaminants targeted at Outfalls 008 and 009.	
	121	Going back to the ISRAWP once again, Sec. 1.1.1 – SSFL Ownership and History, pg. 1-2: "The Work Plan states that surface water discharges from Area IV do not flow to either Outfall 008 or Outfall 009." Is this to say we are not to be looking for radionuclides? The figure below shows the NASA portion known as the ELV a.k.a. CTL II, Well RD-70 and it's watershed has high levels of radionuclides according to the 1993 McLaren-Hart Study. This is disturbing as this drainage passes just outside of Outfall 009. We once again need to assure the Brandies-Bardin Campus of the American Jewish University we are doing everything we can to keep their camp from inheriting the issues of the SSFL. Outfall 009 needs to be lower into the canyon to include the RD-70 watershed or add another Outfall. This area has been overlooked several times			Radionuclides are targeted Outfalls 001 – 011, 018, and 019. Considerable cleanup has occurred in the Northern Drainage which is a portion of Outfall 009.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		as it is the recently purchased Northern Buffer Zone and is rarely looked at. Radionuclides should be in the suite of sampling.				
	122	In your cover letter to Mr. Thomas D. Gallacher, SSFL – Safety, Health & Environmental Affairs, The Boeing Co. "Tentative Requirements" Informing the Public by Posting is to be done. Can you please point me in the direction of where these posting are located and what time frame where they displayed whether in an online or printed/posted format.			The letter specified that the posting was to occur no later than March 18, 2009. Three options were provided. The options were: Post the enclosed notice in the post office and public places of the municipality nearest the premises in which the effluent source is located; or Post copies of the enclosed public notice in a conspicuous place near the entrance of the premises and in the locality to affected by the discharge; or Publish the enclosed public notice in a daily newspaper or periodical which circulates in the general locality to be affected by the discharge. Boeing posted the notice on March 18, 2009 in a number of local newspapers. The Permittee also posted the notice near the entrance of the facility on March 18, 2009. In addition, it was published in the daily news on March 26, 2009. The Regional Board also published a notice of the hearing in the Daily News on March 17, 2009.	None required.
The SSFL Expert Panel **Michael Stenstrom, Ph.D., P.E. Chairman, SSFL Stormwater Expert Panel For Watersheds 008 and 009**						
	123	1. The Expert Panel strongly supports and has supported source removal as ultimately necessary for compliance with the Board effluent limits. In our technical memorandum of April 2008, we recommended a variety of source controls and encourage Boeing to include such controls as well as others to be covered in their Work Plan for submittal to the Board.	X		Staff concurs with the recommendation for source removal.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
	124	2. Based on the Panel members' experience at other contaminated sites, we recommend that stormwater treatment will be necessary during and after source removal, until such time that the remediated site has been stabilized and a true "background" condition has been restored. Implementation of ENTS coupled with a design storm criteria can best meet that need, in our opinion.			Staff believes that immediately after source removal storm water treatment utilizing ENTs will be required for sediment control. Data collected will provide information regarding how effective the source removal activities are and provide guidance regarding the need for additional ENTs to take out contaminants that may still be present at elevated concentrations in the storm water runoff.	None required.
	125	3. The Fact Sheet for the new SSFL NPDES permit should acknowledge: (a) the Panel's specific charge (per the original NPDES permit and CDO) to develop a site specific design storm recommendation, (b) our submittal of this recommendation to Regional Board staff, and (c) the staff's response. We believe that the design storm recommendation should be included in the draft permit itself, but at a minimum, our recommendation should be included in the Fact Sheet. We understand that neither the Board staff nor the Board have accepted our recommendation at this time pending further information on a regional design storm. However, it is our understanding is that a final report for the regional design storm was developed and should be noted and referenced in the Fact Sheet. Nevertheless, the recommendation developed by the Expert Panel was based on detailed, site-specific hydrologic analysis that we believe is consistent with and exceeds the technical standards for such planning. The analysis included a continuous hydrologic simulation (using SWMM) based on a 58-year period of record and a separate corroborating model	X		Staff concurs. A finding regarding the charge of the Expert Panel and the design storm recommendation will be added to the Fact Sheet.	Modify Fact Sheet.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		prepared by Dr. Pitt. The Panel presented information to the Board and the public on how redundant ENTS facilities could treat water under the design storm criteria without creating significant environmental impacts and moving beyond the concept of "engineered natural treatment systems."				
	126	A key recommendation to the Board was the use of composite sampling which is consistent with the scientific literature and national recommendations made by the National Research Council in 2008. Our composite sampling recommendation should be included in the monitoring section of the SSFL NPDES permit or, at a minimum, be referenced in the Fact Sheet with a discussion beyond the current discussion of the very limited 13267 sampling that was done at the SSFL. We do not believe that grab sampling data is meaningful in comparison to composite sampling data for stormwater discharges, and we do not believe that a decision should be made based on the 2004 13267 paired sampling study that was conducted by Boeing, since the sampling dataset is very limited.	X		Staff concurs. The data presented with concerns raised by CBG provides the basis for allowing composite sampling. See response to Comment #89 above..	Update the MRP
	127	Consistent with Dr Stenstrom's commitment to the Board from the April 2008 hearing, we will soon be submitting a report to the Board on "background" levels of dioxins and metals for your consideration.			Board staff looks forward to receiving the report and the ensuring technical discussions.	None required.
	128	Please revise the inaccurate statement on p 46 of the Fact Sheet where it states the "Discharger selected" the Panel. This should instead read: "The Panel was selected by the Discharger with specific input			Staff concurs. The statement will be modified as requested.	Modify statement on Page 46 of the Fact Sheet.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		and review from Regional Board staff and water resources-focused environmental organizations."				
	129	As our previous charge to develop a site specific design storm and Engineered Natural Treatments Systems at the SSFL outfall watersheds 008 and 009 originally came from the Regional Board, we would appreciate your guidance on how our Panel can continue to assist the Regional Board, Boeing and the public in the future.			Board staff sees the Expert Panel's continued involvement as a vital part of the process for Boeing to achieve full compliance with the NPDES permit. Immediately after source removal, staff believes ENTs will be required for sediment control. Subsequent data may indicate additional contamination that can be treated utilizing the ENTs such that discharges from these outfalls demonstrate full compliance. The location, size, design and maintenance of theses ENTs will be issues that the Expert Panel will have applicable expertise that will be required.	None required.
Kirsten James, MESM and W. Susie Santilena, MS,E.I.T. Heal the Bay						
	130	While we support a more natural approach to treatment to reduce both the mass loading and concentration of water quality constituents at Outfalls 008 and 009, we do have a few questions and concerns about the proposed revisions. In particular, we are concerned that extending the compliance timeline and reducing hard effluent limits to benchmarks is a major step backwards and is in conflict with the State Board's Order (WQ 2006-0012) that denied a request for a stay of prescribed effluent limitations. In addition, we are concerned that no design storm is specified for the ENTs at Outfalls 008 and 009 in the Draft CDO. We also incorporate herein by reference the comments submitted by Heal the Bay on August 31, 2007, as a number of these comments are still a concern.			The State Board Order did not consider the most recent information which indicates that using the best available technology as BMPs will not provide the required treatment to comply with applicable numeric effluent limitations at the site.	None required.
	131	**A three-year "grace period" with benchmarks instead of effluent limitations**			Staff agrees that the Regional Board has authority to issue numeric effluent limitations for industrial dischargers of	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		is unwarranted and contradicts State Board Order WQ 2006-0012. The major issue that we see with this Draft CDO is temporary removal of effluent limitations for Outfalls 008 and 009. The Draft CDO states that "The Compliance for storm water runoff discharges from Outfalls 008 and 009 from June 10, 2009, to June 26, 2012 shall utilize the final effluent limitations that appear in I.B.4. of Order R4-2009-00XX as benchmarks. Exceedance of benchmarks triggers an evaluation of the BMPs in place with the potential for upgrading or replacing the BMPs (see Section II.C.7. of Order R4-2009-00XX)" (Draft CDO at Page 8). However, the CDO adopted in 2007 (CDO R4-2007-0056) required compliance with final effluent limitations by of June 10, 2009 (at Page 10). Thus by allowing for benchmarks instead of effluent limits in the Draft CDO, the Regional Board is allowing three additional years of water quality standards exceedances. This action is unwarranted. The inclusion of numeric effluent limits for storm water discharges from the facility is appropriate and was upheld by the State Water Resources Control Board ("State Board") on December 13, 2006 in State Board Order WQ 2006-0012. As upheld by the State Board, the Regional Board has full authority to establish effluent limits for discharges consisting entirely of storm water. The presumption under the Clean Water Act is that numeric effluent limits will be the tools used to limit the discharge of			storm water. The permit includes numeric effluent limitations for each outfall. Benchmarks are numeric effluent limitations. In fact, the benchmarks specified for Outfalls 008 and 009 are equivalent to the numeric effluent limitations that were in the permit historically. The only thing that staff is recommending change is the way that the exceedances of the limitations are enforced. With all other numeric effluent limitations violations result in a Notice of Violation and subsequently if warranted a formal enforcement action. Benchmarks are enforced with a requirement to evaluate the BMPs, update the BMP Plan, and either update or replace the BMPs. The three year compliance period during which the benchmarks are proposed is reasonable for the amount of work required to comply with the ISRA Order. The steps specified in the revised tentative CDO are: • Selection of areas of source removal • Evaluation of current data, • Determination of areas requiring additional sampling, • Development of a work plan for sampling, • Comment, response and approval of work plans, • Execution of the work plan for data gap analysis, • Permitting, • Delineation of areas affected by soil removal activities, • Alternative evaluation, • Final work plan to remove soil, • Coordination of efforts for ISRA with efforts to implement ENTS in both watersheds, • Execution of soil removal work plan, • Evaluation of confirmation data from removal	

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		pollutants, particularly toxic ones. Further, the Ninth Circuit has expressly upheld the State's authority under the Clean Water Act to establish numeric WQBELs for industrial storm water discharges. *Defenders of Wildlife v. Browner* (1999) 191 F.3d 1159. Thus, rather than merely establishing benchmarks for these outfalls, the Regional Board has full authority to establish numeric limits, including for toxic constituents in storm water, using the CTR. Therefore, we believe the final effluent limits should not be considered benchmarks and should be effective immediately. Allowing for three years to complete the 13304 requirements and to implement ENTs does not appear justified. The Revised CDO gives a list of activities associated with the implementation of the 13304 Order, and then states that "[b]ased on the number of activities and the complexities of these activities, Regional Board concludes that a three year compliance schedule is the shortest time practicable" (Page 8 Finding 42). While we understand that the Permittee may need time to establish the ENTs, we question the three year compliance timeline issued. The current CDO (CDO 2007-0056) already calls for the development of a work plan that would evaluate BMPs capable of providing the required treatment to meet the final effluent limits, describe BMPs to be utilized, design the BMPs and develop a plan for BMP implementation, include a schedule for the installation of the BMPs at Outfalls 008 and 009, and include a schedule to evaluate			action, • Evaluation of effectiveness of ENTs • Development of upgrades to ENTs, and • Final report on the ISRA and ENTs implementation. Some of these activities have already been initiated. The first four bullets enumerated are progressing concurrently. On May 1, 2009, Regional Board staff will receive a more specific work plan that will specify areas selected for action and enumerate the number of data gap samples planned. Once that information is available, evaluations of the removal areas relative to the previously proposed ENTs sites will begin. The Expert Panel will utilize their skills to develop ENTs to address sediment control in the affected areas. After data is available the Expert Panel will re-evaluate their original plans and how systems can be located in areas to provide additional treatment to runoff that continues to have concentrations of contaminants sufficient to contribute to an exceedance of the water quality based effluent limitations. There are multiple responsible parties involved in the operations at the Santa Susana Field Laboratory. As is true with many sites, the selected remedy chosen by one of the responsible parties to deal with the contamination or permit violations is different from the remedy selected by other responsible parties involved. The 2007 CDO provided time for: • The assembly of an Expert Panel, • The Expert Panel to review site conditions, modeled flow, contaminants of concern and evaluate the BMPs capable of providing the required treatment to meet the final effluent	

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		BMPs' performance. The time schedule for this work plan began November 1, 2007, and ends on June 10, 2009. Have none of these actions been started or completed to date? Also, from the list in the Draft CDO it is difficult to determine the progress of these activities and if time can be saved by working on these simultaneously. This information, perhaps in the form of a table or chart, would help the public understand the real need for the proposed extended compliance schedule.			limitations. • The Expert Panel to provide a description of the BMPs to be utilized. • The Expert Panel to design the BMPs and develop a plan for BMP implementation. Purchase required materials. • A schedule for the installation of the BMPs at Outfalls 008 and 009, and • A schedule to evaluate the BMPs. The Expert Panel was assembled with input from environmental groups and the Regional Board. The Expert Panel's review of site conditions and modeled flow has resulted in a recommendation for a design storm of 2.5 inches over a 24-hour period or 0.6 inches during a one-hour period that was submitted for Regional Board consideration on April 30, 2008. They have provided opinions regarding the capabilities and specific challenges associated with utilizing BMPs only to treat the discharge to meet the numeric effluent limitations. Specifically, the *Final Consensus Recommendation on a Site Specific Design Storm for the Santa Susana Field Laboratory* issued by the Expert Panel indicated that the BMPs would not be able to meet some of the numeric effluent limitations. However, the Expert Panel provided descriptions of the BMPs, recommendations for improvements onsite that would retard storm water flow to allow time for the contaminants to settle out of the runoff. They also provided plans for treatment trains to be put in both the Outfalls 008 and 009 watersheds. Boeing has submitted an application for a permit to Ventura County initially on December 19, 2008. The permit has twice been deemed incomplete. Boeing continues to provide information to	

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
					complete that package. The next submittal is scheduled for April 29, 2009. During this time NASA indicated that they had made the decision to not allow ENTs on their property. This decision was due to the fact that the ENTs are a temporary measure which will eventually need to be removed. NASA has indicated their preference is for a more permanent solution specifically source removal.	
	132	Moreover, both including benchmarks and extending the timeframe for compliance rewards a Permittee who has a history of non-compliance with waste discharge requirements. The Permittee's discharge has chronically exceeded effluent limitations since 1998. The Permittee was already given an extension to comply with the previous Cease and Desist Order issued in 2007, which states, "Discharges from Outfalls 008 and 009 on June 10, 2009, and thereafter, shall comply with the final effluent limits that appear in I.B.4. of Order R4-2007-0055" (CDO R4-2007-0056 Page 10). However, the Permittee continues to exceed standards, as mentioned in the draft CDO when it states, "The Permittee has been discharging effluent that has chronically exceeded the effluent limitations for TCDD, heavy metals and other pollutants from 1998 through 2008" (CDO No. R4-2009-00XX at Page 6). In addition, extending the compliance schedule contradicts directives given to the Regional Board in Order WQ 2006-0012 issued by the State Water Resources Control Board, which "[d]irected the Regional Board to		X	The California Water Code Section 13304 Order to Perform Interim/Source Removal Action of Soil in the Areas of Outfalls 008 and 009 Drainage Areas which was issued on December 3, 2008 essentially alters the remedy utilized to achieve compliance at the two outfalls. The 2007 CDO and all subsequent efforts by the Permittee and by the Expert Panel was to utilize ENTs as the tool to meet the final effluent limitations at these two outfalls. Since the Section 13304 Order was issued in December, 2008 if the original schedule is left in place the Discharger would essentially have less than six months to comply with the order. The Discharger has initiated efforts to comply with the Order. The Regional Board oversees cleanups at other sites throughout the Region. During the April 2, 2009 Board meeting, a report was presented for a Boeing site in Long Beach where the cleanup took five years. The Santa Susana Field Laboratory, and specifically Outfalls 008 and 009 have some additional challenges. However, staff is recommending that the Discharger be provided with a three year compliance period.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		issue a Cease and Desist Order (CDO) with the shortest possible compliance schedule and interim effluent limitations, based on the effects of the Topanga Fire. The effective date of the CDO was to be January 19, 2006" (Revised Tentative CDO Finding 21 at Page 5). By continuing to extend the compliance schedule, the Regional Board is delaying progress. Instead the Regional Board should require compliance with the final effluent limitations immediately and should condense the schedule for implementing the 13304 activities.				
	133	**The draft Permit should specify a design storm the ENTs will be required to capture and treat.** Within the text of the Draft CDO, no finding expresses the design storm set as design criteria for treatment by the proposed ENTs. The previous CDO R4-2007-0056 mentioned in finding 42, "The discharge from SSFL is currently primarily storm water runoff. The size of the site and the volume of storm water runoff generated presents challenges with treating the entire volume of rainfall. An estimate of the 85th percentile of the 1-year 24-hour storm event, the site specific "design storm" for the site resulted in a storm depth of 2.3 inches using the Los Angeles County Department of Public Works (LADWP) estimation models. The new BMPs implemented were designed to treat the storm water runoff generated by a storm depth of that size." However, the latest Draft CDO makes no effort to specify the size of storms ENTs will capture and treat. What is the ENT		X	The design storm recommended by the Expert Panel; is 2.5 inches in a 24-hour period or in excess of 0.6 inches in one hour as measured at the Area IV rain gauge located at the SSFL. This design storm has been used to design the ENTs for Outfalls 008 and009 and it has been used to upgrade the BMPs at all other storm water only outfalls. This is documented in the Fact Sheet and in the WDR. The storm size is equivalent to the 1-year design storm. The proposed design storm does not equate to the five year storm. The report and the presentation provided for the Regional Board on June 5, 2008, indicated the size of the design storm is limited by the storage capacity for runoff within the watershed. During the presentation the Regional Board voiced concern with the potential alleviation of their ability to enforce the numeric effluent limitations with the implementation of the design storm. Regional Board staff felt it premature to implement a design storm prior to the Board providing guidance on how they prefer it be implemented.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		design goal? Since CDO R4-2007-0056 was issued, The Expert Panel concluded that the 85th percentile design storm is not sufficient for Outfalls 008 and 009, and suggest that treatment controls be designed for a larger storm. We believe that for critical source areas, the treatment controls should capture and treat 100% of the runoff volume from the 5 year storm. Any discharge over the design storm should be monitored, and a BMP enhancement plan should be developed for any exceedance of water quality standards. Requiring this design storm is critical for the development and sizing of BMPs, but it should not alleviate any water quality standard compliance obligations. The CDO should specify this design storm.			Since the design storm recommended does not equate to 1 year storm and the Regional Board has not developed policy for how the design storm will be implemented, staff has not implemented the design storm in this permit.	
	134	As mentioned above, The Permittee has had ample time to develop BMPs necessary to attain compliance with final effluent limitations. Given the Permittee's record of non-compliance and ineffectiveness at previous efforts for compliance, the Regional Board should require the Permittee to immediately meet *final* effluent limits. In addition, the Draft CDO should specify a design storm for the ENTs at Outfalls 008 and 009.		X	See response to Comments 131 and 132 above.	None required.
AJ Greenstein						
COMMENTS RE: THE TENTATIVE WDR						
	135	Pg 4, #15... "SSFL has the potential (based on a 24-hour duration, 10 year return storm event) to discharge a total of approximately 168 million gallons per day (MGD) of storm water runoff			Historically, the SSFL discharged wastewater associated with onsite sewage treatment plants, rocket engine testing operations and other miscellaneous industrial activities. Those activities are no longer operational. The domestic wastewater generated onsite is currently collected, and transported offsite to a County Sanitation District facility for	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		that has the potential to contain pollutants from the facilities." **Yet, Page 2, #6 of the CDO states that the "SSFL has the potential to discharge a total of approximately 272 million gallons per day (MGD) of storm water runoff and wastewater that has the potential to contain pollutants from the facilities." Is the difference of 104 MGD the wastewater that comes off the site each day that is not considered storm water runoff? If so, what are the uses of this 104 MGD on the site each day that is contributing that much wastewater runoff? If the 104 MGD is not wastewater then why is there a discrepancy between the two numbers? In all of the paperwork on the facility that I've seen the number used always seems to be 272 MGD – has something changed?**			treatment. The rocket engine testing operations ceased in 2006 and after the Topanga Fire because much of the groundwater treatment system piping was destroyed those operations were suspended. The site currently only discharges storm water runoff. In late 2009 the construction of a new groundwater treatment system is scheduled to be completed. Subsequently, discharges from that system will be started. These operational changes account for the differences in the estimated industrial flows. Over the last few years several models have been used to estimate the storm water runoff from the site. More recently more flow gauges have been implemented to more accurately account for the flows exiting specific outfalls. Consequently, reviews of historical findings and more recent data will result in different estimates of the amount of flow exiting the property.	
	136	#16… "An extensive groundwater remediation/investigation program has been ongoing at the SSFL, has included pumping, treating and storing groundwater at the facility. In July 2004, this system was composed of eight treatment systems, five active and three inactive, which have the capability of producing up to 578 million gallons per year of groundwater treated to remove the volatile and, in some cases, semi-volatile organic compounds. The treatment system was not			The groundwater treatment system is not designed to treat the storm water runoff from the site. The groundwater treatment systems referenced was used to treat a VOC contamination plume that is beneath the site. The system has not been operational since the Topanga Fire September 2005. A new groundwater treatment system has been designed and is currently in the permitting process. The system is scheduled to be complete in late 2009.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		designed to treat other pollutants such as perchlorate or metals." **Since a total of approximately 272 million gallons per day (MGD) of storm water runoff and wastewater can potentially leave the site each day it seems that being able to treat 578 million gallons a year is far from a solution. Are there going to be more treatment systems added to the site that bring this number closer to treating the amount of water coming off the site?**				
	137	#16... "Groundwater treatment operations at the facility were terminated in September 2005 after the Topanga Fire destroyed much of the piping utilized to transport the water around the site." **Why were these treatment systems terminated? It's true that alone they weren't solving the problem, but it seems that the answer is more treatment not less.**			The Topanga Fire destroyed much of the piping used for the groundwater treatment systems. Subsequently, that piping would require replacement or the design of the system could be revaluated. The Discharger decided to change the design of the system. There will be a treatment system located near CTL-III in Area 1. Groundwater will be pumped from wells located throughout the site to the groundwater treatment system.	None required.
	138	#17... "Groundwater treatment is scheduled to resume in late 2009." **Again, why isn't the groundwater being treated now? And once the treatment system resumes how much water will be treated a day?**			The treatment system is not in place right now. The specifics regarding the treatment system and permitting requirements is associated with the RCRA activities at the site. Those activities are proceeding with DTSC oversight.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
	139	#18... "The STP1 and STP3 basins are currently used as collection points for wastewater generated onsite. Every few days, vacuum trucks transport the accumulated waste off site for treatment." **Could more contaminated water be trucked offsite for treatment instead of having it flow off the site into communities and waterways of the U.S.**			The only water flowing offsite currently is storm water runoff. That storm water runoff traverses contaminated areas onsite and picks up contaminants that are subsequently transported offsite. Since the contaminated water is storm water runoff and unlimited storage is not available, it is not an option for the Discharger to collect and ship that storm water runoff offsite.	None required.
	140	#19... "If the supply of reclaimed water exceeds requirements, the R-1 Pond will overflow into Perimeter Pond; excess water from Perimeter Pond will then flow south to Bell Creek through Outfall 001. Discharges through Outfall 001 are rare, and will usually only occur after rainfall over an extended period." "If the supply of reclaimed water exceeded requirements, the water was discharged to the south through R-2A Pond, and then to Bell Creek through Outfall 002." "Industrial operations onsite historically discharged untreated wastewater directly to either constructed or natural drainage areas and streambeds. The wastewater flowed to ponds located onsite and was subsequently used in other industrial activities such as			The operations at the site are primarily associated with cleaning up contamination. The construction of manmade ponds is not the preferred remedy to deal with the transport of contaminants offsite.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		quenching operations during engine tests. These natural drainage areas and streambeds are waters of the United States." **Could other manmade holding ponds be built onsite that allows more water to stay on site and get treated before leaving the SSFL property?**				
	141	#20 & 21... "The five active ponds used historically for collection and storage of reclaimed water are: R-1 Pond - capacity 3.7 million gallons Perimeter Pond - capacity 1.3 million gallons Silvernale Pond - capacity 6.0 million gallons R2-B Pond - capacity 200,000 gallons R2-A Pond - capacity 2.5 million gallons SSFL has the capability to redirect the flow in each of the five ponds via unlined channels, water lines, or pumping into water storage tanks as follows: R-1 Pond - Flow may be discharged to Perimeter Pond or pumped to the Reclaimed Water Storage Tanks. Perimeter Pond (PP) - Flow may be released to Bell Canyon or pumped to R-1 Pond. Silvernale Pond - Effluent flows by gravity to R2-A Pond.			The NPDES permit provides effluent limitations that are designed to protect human health and the environment. To the extent possible the Discharger holds storm water runoff onsite. However, to the north several outfalls do not have any storage capacity associated with them. Hence, rain events that generate runoff result in discharges from those outfalls.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		R2-B Pond - This pond is a silt inlet to R-2A Pond. Flow goes directly to R-2A Pond. R2-A Pond - Flow may be released to Bell Canyon or pumped to Silvernale Pond." **The bottom line is that all of this water flowing over contaminated areas of the SSFL should not be released offsite into waterways of the U.S. until it is treated and within safe levels. It is not fair to all who are using this water in their daily lives – drinking it, children playing in it, people watering their fruits and vegetable with it, etc...**				
	142	#23... "Wastewater discharges to surface waters will occur solely from the Groundwater Extraction Treatment System (Outfall 019), when it begins operations." **When will this treatment system begin operations – is this the treatment system set to begin in late 2009?**			The system referenced is the groundwater treatment system which will begin operation in late 2009. There are currently no groundwater discharges from the site. This treatment system will not address the contaminant concentrations in the storm water runoff.	None required.
	143	#27... "Many of the areas that discharged wastewater to the drainage areas and streambeds are associated with activities that are being regulated by DTSC under RCRA." **Can you explain the overlap between your agency and the DTSC? Who will be responsible for what? And what**			The Regional Board has responsibility for oversight of the National Pollutant Discharge Elimination System (NPDES) Permit Program. The Regional Board using the NPDES permit regulates discharges to surface water. DTSC has oversight responsibilities for the cleanup. The site is currently involved in a Resource Conservation Recovery Act (RCRA) assessment and cleanup. The cleanup will address soils, and groundwater contamination.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		precautions will be taken to ensure that all areas are covered. Does your agency ultimately have final say over all issues relating to the water flowing off of the SSFL site?				
	144	#29… "The operations evaluated at SSFL during the development of Order R4-2004-0111 and the agency (RWQCB or DTSC) with primary oversight authority and the NPDES outfall number associated with the operation if the Regional Board has oversight are listed below…" **The list on this page shows that oversight is different depending on the area – why is this the case? And, do you consider this to be the safest way to oversee these problems?**			DTSC has oversight of the groundwater treatment units (GWTS). That agency permitted those units and consequently had oversight responsibility. However, those units are no longer operational. The new unit will be located in Area I, near CTL-III. Discharges from the units must comply with the NPDES permit requirements.	None required.
	145	#29… "Operations at the test stands (Outfalls 012 – 014) and the sewage treatment plants (Outfalls 015 – 017) have ceased. No further process waste discharges are expected from these areas." **But will these outfalls continue to be monitored since these areas are still under investigation and have yet to be fully cleaned up?**			Yes, storm water traversing these areas is monitored. The locations have benchmarks that are based on the historic operations that are used to evaluate the performance of BMPs in those areas.	None required.
	146	#30…			That is correct. The sampling of the mixed waste provides	None

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		"During storm events the discharge from Outfall 019 will be piped downstream of the engineered BMPs located at Outfall 011 but prior to the area where the sample is collected. Therefore, the sample collected at Outfall 011 during storm events will have mixed wastewater; storm water runoff and effluent from the groundwater treatment unit." **Does this mean that samples will not be taken from outfall 19 as well?**			an opportunity to evaluate the total effect of the storm water runoff mixed with the treated groundwater. If the groundwater treatment system is discharging and there is no rain event, Outfall 019 will be sampled separately.	required.
	147	#32... "Past operations at SSFL have resulted not only in contamination of the groundwater with volatiles but also with various types of surface and near surface soil contamination. Previous investigations and sampling has confirmed the presence of elevated concentrations of mercury and perchlorate in soil, which has been present in storm water runoff in elevated concentrations. The persistent transport of these contaminants offsite in storm water requires that these contaminants have effluent limits in this Order." **Since water is flowing from one area of the SSFL site into other areas and eventually offsite, are all monitoring locations sampling for all possible contaminants of concern? It seems clear that these contaminants are moving all across the**			The chemicals of potential concern that are monitored are associated with contaminants present in the vicinity. The frequency of the monitoring required increases if the contaminant has previously been detected at elevated concentrations.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		site, and just because a certain contaminant was used near one outfall it doesn't mean that it can't be found across the site at another.				
	148	#36… "Storm water runoff from the northwest slope of the facility is monitored at Discharge Outfalls 003, 004, 005, 006, 007, 009, and 010 which discharge towards the Arroyo Simi. The outfall locations near the Northwest slope are located such that they capture runoff from past and existing radiological facilities." **Are all outfalls being monitored for all possible radiological contaminants that were used on the site?**			These outfalls are monitored for the radionuclides that are included in the Los Angeles Region Basin Plan and additional constituents included in the monitoring protocol prescribed by the DPH.	None required.
	149	#40… "Since the five active RCRA permitted treatment systems are not designed to treat perchlorate, the Discharger has in some instances terminated the treatment of the pumped groundwater from the locations where perchlorate has been detected." **But, aren't these treatment systems helping with regards to other contaminants? And, isn't there a treatment system that they can use that is designed to treat perchlorate? Also, the WDR states that in "some" instances the treatment of the pumped**			Those systems are no longer online. They are part of the groundwater treatment system that had the piping destroyed during the Topanga Fire. The system has been redesigned and is scheduled to be operational in late 2009.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		groundwater was terminated, so in which instances did they leave the treatment systems on?				
	150	#42… "The data collected was used to evaluate reasonable potential of the discharge to exceed applicable requirements and **if warranted**; effluent limits were implemented for the discharges in Order Nos. R4-2006-0008 and R4-2006-0036." **What does the "if warranted" part mean? At what point would this become "warranted?" And, why do we have to wait to place these effluent limits on this area?**			The data must demonstrate reasonable potential to justify inclusion of a limitation in the permit. The reasonable potential analysis includes a statistical analysis of the data and an evaluation of other information. In all cases where reasonable potential for the contaminant to cause or contribute to an exceedance of water quality based effluent limitations is demonstrated, a permit limitation is implemented.	None required.
	155	#44… "The water reclamation system at SSFL is no longer operational." **Why is this reclamation system no longer operational?**			The facility operations that historically utilized the water that was collected for reuse have ceased. Since there is no need for the water, the reclamation system is no longer required. The ponds are used to store storm water that flows to the southern portion of the site. However, there is limited storage capacity. Once the ponds become full, access storm water flowing to the south exit the site and flow to Bell Creek.	None required.
	156	#50… "Surface water discharges from the north west edge of the SSFL are directed to Arroyo Simi a tributary located in the Calleguas Creek Watershed. Supplies of groundwater are critical to agricultural operations and industry (sand and gravel mining) in this watershed. Moreover, much of the population in the watershed relies upon groundwater for drinking.			The groundwater beneath SSFL is contaminated with TCE. Consequently, areas that discharge groundwater are the most likely locations where TCE would be present. The permit includes a requirement to monitor for TCE and a host of other volatiles at Outfalls 001, 002, 011, 018, and 019. The monitoring requirement here is once per discharge event. At all other storm water only discharge locations the permit requires monitoring for TCE and all other volatiles annually.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		Since groundwater from these basins is used to provide drinking water to a large portion of the population, Title 22-based limits are needed to protect that drinking water supply. By limiting the contaminants in the SSFL discharges, the amount of pollutants entering the surface waters and groundwater basins are correspondingly reduced. Once groundwater basins are contaminated, it may take years to clean up, depending on the pollutant. Compared to surface water pollution, investigations and remediation of groundwater are often more difficult, costly, and extremely slow. For these reasons Title 22-based limits will remain in the NPDES permit where there is reasonable potential." **Isn't the groundwater already badly affected by TCE? And, is TCE one of the contaminants sampled for at ALL monitoring locations? Also, regarding Title 22, isn't there "reasonable potential" for these requirements to stay in the permit simply due to the contaminants that were used up at the SSFL and previously found in the waters of the SSFL?**				
	157	#58... "Those provisions require a reissued permit to be as stringent as the previous permit with some exceptions where effluent limitations may be relaxed." **Does this mean that some of the effluent limitations are going to be relaxed? And,**			This is a requirement for all NPDES permits. It is included to verify that the backsliding requirements has been considered and that the permit complies with the requirements.	

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		what would be the purpose for relaxing some of the effluent limitations?				
	158	#66… "Many of the beneficial uses stipulated are intermittent for Dayton Canyon Creek, Bell Creek and the Arroyo Simi. The discharges from SSFL in many cases provide a significant portion of the headwaters for these waterbodies, specifically for Dayton Canyon Creek and Bell Creek. Since there is little assimilative capacity for Dayton Canyon Creek and Bell Creek, a dilution factor is not appropriate and the final WQBEL should be a numeric objective applied end-of-pipe. The assimilative capacity for Arroyo Simi, which is the receiving water for storm water discharges from the northern boundary of SSFL, has not been evaluated and consequently no dilution has been given for discharges to that receiving water." **I'm not sure that the best answer for fixing this problem is found in diluting the problem. It seems that the problem needs to be fixed at the source, especially since a good amount of water coming off the SSFL site is also going through natural waterways that aren't being monitored, and most likely would not be included in the diluting process.**			The referenced finding provides the basis for decisions made within the permit. Staff is not proposing dilution as a method for meeting the effluent limitations.	None required.
	159	#71… "RPAs were performed for each of 126 priority pollutants for which effluent data were			The NPDES program is a self-monitoring program. The Discharger either collects or contracts for the collection of the samples which are analyzed at a State of California Environmental Laboratory Accreditation Program (ELAP)	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		available. The basis for each RPA determination is identified in the attached Fact Sheet, which is part of this Order. The input data for the RPAs were provided in the Self-Monitoring Reports submitted by the Discharger. One RPA was performed for discharges from Outfalls 001 and 002, which are composed of treated wastewater, water from the groundwater treatment systems, excess reclaimed water, water from the engine test stands, and storm water. Four analytes had reasonable potential to exceed WQBELs: copper, lead, mercury, and TCDD. Three of these analytes (copper, lead, and mercury) had effluent limitations in the previous order." "Effluent limits for a number of volatiles, which were included in the current Order and are believed to be present in the groundwater contaminant plume, have also been included in this Order." **What contaminants that were used at the SSFL do not have effluent limitations placed on them, and isn't there a potential for any contaminant used up at the site to exceed WQBELs? And, are there split samples taken by the LARWQCB during all of the self-monitoring by the discharger, and if so what percentage? I'm hoping that the answer is yes, and that the percentage of split samples is high.**			certified laboratory. The chain of custody forms, laboratory reports, and data summaries are submitted to the Regional Board under penalty of perjury. Regional Board goes out to the site periodically and collects samples if there are discharges. The Permittee routinely collects samples when the Regional Board staff collects samples as well. The Regional Board does not analyze a specific fraction of the samples analyzed by the Permittee.	
	160	#71…			The completion of the reasonable potential analysis	None

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		"Cyanide was detected only once during the period evaluated at a concentration of 5.8 micrograms/liter (µg/L). That detection triggered the reasonable potential since it exceeds that calculated average monthly effluent limit (AMEL). However, the discharges evaluated are storm water only discharges, which do not have monthly average limits. When the maximum effluent concentration (MEC) of 5.8 µg/L is compared to the maximum daily effluent limit (MDEL) the MEC is less than the MDEL. Consequently, Order R4-2004-0111 does not include an effluent limit for cyanide in the storm water only discharges." **Why does this order not include an effluent limit for cyanide? Again, I don't understand why there aren't effluent limits placed on all contaminants that have been used up at the SSFL that could put the public in danger.**			performed on data available in did not indicate that concentrations of cyanide present would cause or contribute to an exceedance of applicable water quality criteria in storm water.	required.
	161 163	#73... "Step 7 of SIP Section 1.3 recognizes that in certain instances a rote, mathematical analysis of the data will not be sufficient to protect beneficial uses. Step 7 therefore reserves for the Regional Board the obligation to "review other available information to determine if a water quality-based effluent limitation is required, notwithstanding the above analysis in Steps 1 through 6, to protect			There is a large data set for the discharges associated with all fifteen outfalls at SSFL. The data collected is used to evaluate reasonable potential at the sites. The revised – tentative permit represents Regional Board's staff's recommendations.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		beneficial uses." Among the factors the State Board identifies as relevant to the Step 7 analysis are: the facility type, discharge type, and potential toxic impact of the discharge. With respect to the Facility, the Regional Board finds sufficient, unusual circumstances to require a water quality-based effluent limitation for trichloroethylene (TCE). Data and testimony indicate that approximately 530,000 gallons of TCE were released to the soil and groundwater at the Facility. The tremendous volume of TCE released at the site warrants significant scrutiny. While recent monitoring data do not show TCE in surface water discharges, scouring from large storm events may release soils with adsorbed TCE. The large volumes of TCE in scoured soils may become chemically available in the surface water runoff and cause or contribute to an exceedance of the water quality standard. In addition, the existing monitoring data has been collected far downstream from on-site sources. The data may not reliably indicate the presence of TCE in waters of the United States because the turbid conditions may have volatilized the TCE before it reached existing monitoring points (Outfalls 001 and 002). Further, contamination is spotty and not completely characterized; pathways are not always predictable and are not fully characterized; and the site is in a hilly environment with uncertain pathways and seeps which could possibly lead to surfacing of water with contamination that cannot be				

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		predicted. Finally, TCE is a probable carcinogen that can cause skin rashes on contact, and when ingested has been associated with liver and kidney damage, impaired immune system function, and in large volumes unconsciousness, impaired heart function, or death. Considering the toxic nature of TCE and that past practices at the site released extraordinary volumes of TCE into the environment that can leach into surface water through the scouring from storm events, and further considering that the existing monitoring data may not be representative of direct discharges to waters of the United States since the data were collected downstream of the initial discharge, the Regional Board has determined that a water quality-based effluent limitation for TCE is necessary to protect beneficial uses." **All of the examples and reasoning behind why TCE has been given an effluent limitation could also be made for every other contaminant used on the SSFL site. Therefore, I believe that all contaminants used on the SSFL site should be sampled for and given effluent limitations. Sufficient and unusual circumstances exist for all the radionuclides, metals, pcb's and other contaminants used on the site. If the information from the WDR above is read again and most other contaminants are put in the place of TCE it still reads true.** **Also, if sampling is not sufficient for**				

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		finding TCE then perhaps it is also insufficient for finding other contaminants as well.				
	164	#80... "After the adoption of Order R4-2004-0111, the Discharger collected data at **most** of the new compliance locations specified in the Order. This Order (R4-2006-0008) amends Order R4-2004-0111 and includes effluent limits for the constituents that have, as a result of the monitoring and compliance sampling, demonstrated reasonable potential (RP)." **Why did the Discharger only collect data at "Most" of the new compliance locations and not at all of them?**			The monitoring requirements specified sampling during each discharge event. Some of the locations did not operate during the interim period and consequently there were no discharges to sample.	None required.
	165	#81... "The Technical Support Document (TSD) for Water Quality-based Toxics Control (EPA/505/2-90-001) methodology for evaluating RP was used for all other constituents of concern (Page 53, Box 3-2). This evaluation resulted in statistical RP for iron, manganese, settleable solids, MBAS, TSS, perchlorate, nitrate +nitrite as Nitrogen, oil and grease, sulfate, BOD, and total dissolved solids. Effluent limits for barium, fluoride, residual chlorine and chloride were retained after the completion of the BPJ analysis." **Are the effluent limits placed on these**			The basis for each limit included in the NPDES permit is included in the Fact Sheet on Pages 49-54. Most of the limits referenced are included in the Los Angeles Regions Basin Plan. The limit for perchlorate is based on the Department of Public Health Notification Level.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		contaminants from a nationwide standard or are they chosen specifically for the SSFL site?				
	166	#81... "Outfall 008 was a monitoring location for perchlorate and had no data for other priority pollutants." **Since there's an outfall there that can be monitored why not monitor for other priority pollutants and contaminants of concern as well?**			This is historical information, current prior to the adoption of the 2004 Order. Outfall 008 is currently monitored for all priority pollutants, perchlorate, and a number of Basin Plan constituents.	None required.
	167	#85... "The storm water discharges (Outfalls 003 through 010) did not have reasonable potential for zinc. Outfalls 003 through 007, 009, and 010 flow to Arroyo Simi, a tributary to Calleguas Creek. However, discharges from Outfall 008 flow to the LA River, which has the LA River Metals TMDL that provides a WLA for zinc. That WLA has been incorporated as an effluent limitation at Outfall 008 only. The LA River Nutrient TMDL requires WLAs for ammonia-N, nitrate-N, and nitrite-N, which were also included for this outfall." **Does this mean that there are more protective regulations set in place for waters that flow into the LA River than the waters that flow into Arroyo Simi and the Calleguas Creek?**			The total maximum daily loads (TMDLs) are developed for waterbodies that do not fully support the beneficial uses. Specific contaminants or physical conditions are listed as impairments for those surface waters. Metals are listed as a stressor for the Los Angeles River and its tributaries. Consequently, a metal TMDL was developed and approved for the waterbody. This permit implements the TMDL.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
	168	#88... "The developed portion of the site has a number of areas of concern that are included in the RCRA assessment and cleanup proceeding with DTSC oversight. Each of these areas has the potential to contribute contaminants to the storm water runoff traversing it. Since Outfalls 011 and 018 are near the boundary of the developed portion of the site, the Regional Board has decided to retain them as compliance points with numeric effluent limits. However, runoff from a couple of areas of concern may not be captured in monitoring which occurs at these outfalls. Therefore, the Discharger will be required to continue monitoring at Outfalls 001 and 002." **I'm glad that outfalls 1 and 2 will continue to be monitored.**	X		Staff concurs.	None required.
	169	#88... "A "benchmark" is a water quality based effluent limit or a performance based limit that is used to evaluate the performance of BMPs with regard to the removal of contaminants present in the discharge. In this permit, the benchmarks are established based on water quality based effluent limits. Exceedance of a benchmark triggers an evaluation of the BMPs implemented at the site. The evaluation may determine that the BMPs require augmentation, upgrade, or replacement. If so,			The numeric effluent limits are the benchmarks. The only difference is exceedance of the benchmark during two consecutive sampling events triggers an evaluation of the BMPs in place, update to the BMP Plan, inspection , and the possible update and/or replacement of the BMPs. Benchmarks do provide some relief, however, during that time the Permittee is also required to work expeditiously to complete source removal activities.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		the Discharger must update the BMP Compliance Plan, secure the required approval from the Executive Officer, and implement the required upgrades." **All "Benchmarks" should be effluent limitations that not only let everyone know that there was an exceedance but also allows for a violation to occur which will push the discharger to work harder to rectify the situation and put the correct BMP's in place to stop violations which will continue to cost them money. To put it simply, benchmarks do not carry the same weight as violations and therefore do not provide the best possible protection for the public.**				
	170	#90… "The Topanga Fire resulted in significant alterations to the site. The exposure of the surface soils with no vegetative cover to runoff has increased the potential for the transport of those surface soils and associated contaminants offsite as a result of the fire. **The fire created runoff conditions at SSFL over which the Discharger has limited control**." **I'm not sure if this statement is suggesting that although they have "limited control" they should have more control, or if it is suggesting that "limited control" is all that is possible. Does the board believe that**			This statement provides the basis for providing a limited compliance schedule with interim effluent concentrations for contaminants immediately after the Topanga Fire. The limited control referenced was associated with contaminants present as a result of the fire including burned telephone polls, electrical wires, vegetation, etc. The compliance schedule that was provided extended from January 19, 2006 through August 31, 2006.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		this limited control of the runoff is as good as it can get after the years that have passed since the fire in 2005?				
	171	#90… "It further states that the "perennial plant cover differed by significantly more than 30 percent between burned and unburned transects, total vegetative cover differed by significantly greater than 20 percent cover and ground cover differed by significantly more than 30 percent cover." The executive summary also states that the burned chaparral and scrub vegetation will likely recover to near pre-fire conditions within five to ten years." **Does this mean that Boeing is expected to and will continue to release contaminants at a higher rate into the waters of the United States until at least 2015?**			This finding summaries information submitted by the Discharger regarding the effects of the fire on vegetation onsite, which acted as a natural BMP for storm water runoff from the site.	None required.
	172	#91… "Years of testing have resulted not only in groundwater contamination but in surface and subsurface soil contamination. These contaminants may be mobilized by storm water traversing these areas. Therefore, this Order includes a requirement to implement BMPs around these areas and to monitor the storm water runoff for contaminants of concern. The previous effluent limits for discharges from the engine test stands provide benchmarks, to evaluate the effectiveness of the BMPs with controlling			The operations that historically generated flow from the areas have been terminated. Since, the operation has been terminated, the effluent limitations are no longer applicable. However, staff believes that residual contamination at these sites may be mobilized by storm water runoff. Consequently, the effluent limitations previously applicable have been implemented as benchmarks to evaluate the effectiveness of BMPs implemented at these locations.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		the transport of contaminants from the areas." **Does this mean that what used to be effluent limits that came with violations around these test stands has now become benchmarks that don't result in a violation if the Discharger releases contaminants into the waters that flow off the SSFL site?**				
	173	On Pg 41, with regards to the effluent limitations for Cadmium and Selenium… "Effluent limit applies only during wet weather discharges. Wet Weather conditions occur between October and March." "Effluent limit applies only during dry weather discharges. Dry weather conditions occur from April through September." **Why are there only limitations placed on these contaminants during discharges that either occur during dry weather discharges or wet weather discharges? Why aren't limitations placed on these contaminants during any type of discharge?**			These limitations and the implementation are based on the TMDL. The TMDL specifies whether the limit is a wet weather limit or a dry weather limit.	None required.
	174	On Pg 42… **Where do the "Limitations Daily Maximum" numbers come from that are on this page?**			They have been developed utilizing the reasonable potential protocol outlined in the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP).	
	175	On pg 45… "With the exception of Outfalls 001 and 002, in			The finding provides a framework for two agencies DTSC and the Regional Board to work cooperatively at the site to protect human health and the environment.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		the event that an effluent limitation set forth above for a pollutant other than a radioactive material is exceeded and the Discharger presents within 30 days of the date of discovery documentation that (i) discharges from a solid waste management unit (unit) regulated by DTSC are causing or contributing to the violation, and (ii) the Discharger was in compliance with all applicable requirements of DTSC permits and corrective action requirements for the unit, and (iii) modifications to DTSC's permit or corrective action requirements are necessary to consistently comply with this Order, then the Discharger, DTSC, and Regional Board will work cooperatively to develop a schedule that is as short as possible to take appropriate actions under the RCRA corrective action requirements or permits, as appropriate, to ensure compliance with this Order. This Order may be reopened and modified, in accordance with applicable laws and regulations, or a Time Schedule Order issued to incorporate appropriate interim limits while the appropriate actions are being taken under the RCRA corrective action requirements or permits." **This seems to state that if a pollutant exceeds it's limit within the laws set in place that it will not be counted as a violation - with the exceptions of outfalls 1 & 2, and radionuclides – but aren't these exceedances just as harmful to the public as any other exceedances that have been put in place to protect the public?**				

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
	176	Pg 47...#4-a-2... "If either of the above requirements (Section I.C.4.a.1) is not met, the Discharger shall conduct six additional tests over a six-week period. The discharger shall ensure that they receive results of a failing acute toxicity test within 24 hours of the close of the test and the additional tests shall begin within 3 business days of the receipt of the result. If the additional tests indicate compliance with acute toxicity limitation, the discharger may resume regular testing. However, if the results of any two of the six accelerated tests are less than 90% survival, then the Discharger shall begin a Toxicity Identification Evaluation (TIE). The TIE shall include all reasonable steps to identify the sources of toxicity. Once the sources are identified, the Discharger shall take all reasonable steps to reduce toxicity to meet the objective." **Why is the Discharger given so many chances to fix this problem of toxicity in the water without being given an actual violation? Why are they allowed to conduct six additional tests when this happens, followed by the opportunity if two out of six of the tests still show a problem to begin a Toxicity Identification Evaluation to try and identify the source of the problem. Then, when they identify the problem they are supposed to take "reasonable" steps to meet the "objective" or law set in place? Yet it seems that they are not given a**			This is the standard method implemented in every permit with toxicity limitations. This is the result of fact that toxicity is often sporadic.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		violation for breaking the law, followed by a fine to actually cause them some sort of pressure to fix this problem. Am I understanding this correctly?				
	177	Pg 49… "If a toxicity identification evaluation (TIE) is necessary, an indication of the person who would conduct the TIEs (i.e., an in-house expert or an outside contractor) (See MRP Section IV.E.3. for guidance manuals)." **If it is necessary to conduct a T.I.E. then why is it left up to the Discharger to perform? Shouldn't there at least be split samples taken since this step is being done at the point where a problem has already been found?**			The NPDES program is a self-monitoring program. It is designed such that the Permittee has responsibility for all sampling. The permit requires that the Permittee utilize analytical methods approved by USEPA that are listed in the Code of Federal Regulations. The permit also specifies that the samples are analyzed in a California Department of Public Health ELAP certified laboratory.	None required.
	178	Pg 49… "The following sediment interim WLAs are effective as sediment limitations from through June 26, 2014 (five years from the effective date of this permit)." **Why are these interim measures being put in place opposed to solid limitations?**			These criteria are based on the TMDL and its implementation plan as presented in the Calleguas Creek Organochloride Pesticides and PCBs TMDL.	None required.
	179	Pg 52… "If the analytical result of a single sample, monitored monthly, quarterly, semiannually, or annually, exceeds the monthly average limit			This discussion appears in the item that addresses compliance with the monthly average limitations. The protocol directs the Discharger regarding the evaluation of results when the first sample collected exceeds the monthly average. Since it is a monthly average effluent	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		for any constituent, the Discharger shall collect four additional samples as early as flow is available during the month. All five analytical results shall be reported in the monitoring report for that quarter, or 45 days after results for the additional samples were received, whichever is later. When all sample results are greater than or equal to the reported Minimum Level (see Reporting Requirement II. C. of M&RP), the numerical average of the analytical results of these five samples will be used for compliance determination. When one or more sample results are reported as "Not-Detected (ND)" or "Detected, but Not Quantified (DNQ)" (see Reporting Requirement II. C. of M&RP), the median value of these four samples shall be used for compliance determination. If one or both of the middle values is ND or DNQ, the median shall be the lower of the two middle values." **Does this mean that if one sample is taken that is over the limit it will not count as a violation, but instead, more samples will be taken and the average of all the samples will be what is counted as the sampling result? Why is it done this way? Why are they averaged opposed to the first occurrence being counted as a violation, with all occurrences to follow also counted as violations? I do think that more samples should be taken after the initial occurrence,**			limitation it is to evaluate more than one discharge over a month. This is standard language included in all NPDES permits and the method outlined is used to evaluate compliance of all NPDES permittees.	

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		but each sample that is over the limit should be counted as a separate violation. **Also, with regards to the section that states, "If one or both of the middle values is ND or DNQ, the median shall be the lower of the two middle values" – why is the lower of the two chosen? Wouldn't it be more protective to assume that the higher sample is correct?**				
	180	Pg 54 - #8… "So long as the Discharger has complied with the procedures set forth above and is implementing the revised BMP plan and its components, the Discharger does not have to repeat the same procedure for continuing or recurring exceedances of the same effluent limitations or receiving water limitation unless directed by the Regional Board to develop additional BMPs." **What sort of time frame is the section above referring to? In other words, is it referring to the same type of exceedance within the same 30 day period while the BMP is being implemented, or is the time frame longer than that? Because I believe that the Discharger should be facing violations for every exceedance – if anything this would add pressure for them to set up a BMP and make sure that it's effective as fast as possible.**			Since the discharge is primarily storm water it is unlikely that there will be multiple discharge events in a 30 day period. That is a function of the infrequency of rain events in this area. Once the second exceedance is noted, the process of evaluating the BMP Plan, inspecting the BMPs, updating the Plan and implementing required upgrades or replacements to the BMPs. .	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		AJ Greenstein **COMMENTS RE: THE CDO**				
	181	Pg 2, #7, of the CDO… "Outfall 008 – This outfall is located in the area commonly referred to as Happy Valley. The entire watershed covers approximately 62 acres." **It is my understanding that the area encompassing Outfall 008 is actually 348 acres. Why is it estimated to be a much smaller area in the CDO?**			Originally, the area included went to the site boundary. The revised acreage actually address the area that drains to the outfall only.	None required.
	182	Pg 3, #8… "On July 30, 2004, a Petition from Committee to Bridge the Gap for Review of Regional Board Order No R4-2004-0111 was filed. The petition requested a stay of the requirements included in Order R4-2004-0111 to the extent it would remove water quality based effluent limitations for certain metals and volatile organic compounds applicable to seven outfalls at the site. On September 17, 2004, the State Board adopted Order WQO 2004-0014, which denied the petitioners request." **Why was the petitioner's request denied? Wouldn't the petitioner's request add a more protective requirement of the discharger by making them responsible for effluent limitations for these metals and volatile organic compounds?**			Please refer to the State Board Order WQO 2004-0014 for an analysis regarding the basis for denial of the petition.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
	183	Pg 3, #11… "In a letter dated April 14, 2005, the Permittee, in response to the March 14, 2005 NOV, submitted a report detailing corrective actions taken. The Permittee asserted that most of the exceedances are the result of natural causes and/or new constituents, effluent limits or methodologies in the renewed permit. The Permittee also asserted that they planned to request that the permit be modified to remove permitted discharges that were generated by operations that have been terminated (sewage treatment plants)." **How could the Permittee assert that natural causes are to blame for exceedances – doesn't' the fact that they are exceedances pretty much mean that they are contaminants that are above the natural background found in the area/water?**			Comment noted.	None required.
	184	Pg 8, #2… "Compliance for storm water runoff discharges from Outfalls 008 and 009 from June 26, 2009, to June 26, 2012 shall utilize the final effluent limits that appear in I.B.4. of Order R4-2009-00XX as benchmarks. Exceedance of benchmarks triggers an evaluation of the BMPs in place with the potential for upgrading or replacing the BMPs (see Section II.C.7. of Order R4-2009- 00XX)." **Why are the effluent limits being changed**			Benchmarks are currently utilized to evaluate compliance at Outfalls 008 and 009. The benchmarks are the same numeric effluent limitations utilized for other storm water discharges. The sole difference is the method utilized to enforce compliance. The benchmarks require compliance utilizing the implementation of BMPs in an iterative process. The Discharger is also required during the period when the effluent limits are treated as benchmarks to identify the sources of contamination and remove them or treat them such that they are not available for transport offsite in the storm water runoff.	None required.

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		to "Benchmarks" here? Aren't the contaminants that flow off the site at these outfalls just as dangerous as they always were? So, why are the violations that the Discharger would have to pay taken away when they are still in violation of the regulations set in place?				
AJ Greenstein COMMENTS RE: ROWD						
	185	I'm not sure if the ROWD is one of the documents that is supposed to be commented on, but I do have a few questions regarding this document. First of all, I didn't see a category on the list for each outfall that shows what was found when sampling for Tritium, Strontium-90, or Perchlorate – yet on pg 42 of the tentative WDR these contaminants are listed with what their maximum daily limitations are. Did I miss where the sampling results are located for these contaminants in the ROWD?			Sampling results for the contaminants of concern can be found in the quarterly reports submitted to the Regional Board. Those reports are available online at http://www.boeing.com/aboutus/environment/santa_susana/water_quality.html.	None required.
	186	Also, pages V-2 through V-6 (regarding Outfall 1) were missing from the ROWD that I downloaded off your website. Were these pages missing from everyone's copy? And, what are the sampling results listed on these pages?			During the scanning and uploading some of the pages were not included. Staff will have a full copy posted on the website as soon as possible.	None required
	187	On Pg 10 of 64 Boeing requests that the discharge limits at Outfalls 008 and 009 continue to serve as "Benchmarks" in the renewed permit, but I believe that they shouldn't have been benchmarks in the first			Please see response to Comment No.131 above.	None required

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		place, and should not be allowed to continue as benchmarks. There should be effluent limitations put in place until these outfalls are no longer in violation of the laws set in place regarding the discharge of contaminants into the waterways of the United States.				
	188	Pg 13 of 64 from the ROWD discusses certain contaminants that Boeing would like to have removed from the monitoring program because they state that these contaminants haven't been found since 2004. They go on to state that "the burden in the form of continuing monitoring and reporting costs far outweighs any benefit from continued monitoring." I strongly disagree with this statement, and believe that the exact opposite is true. I believe that the lives that can be harmed by the contaminants that flow off the SSFL site far outweigh the burden of continued monitoring and that these lives should be protected.			Comment noted.	None required
	189	Also, as the site continues to be worked on contaminants will be stirred up and can move into waters where they haven't been found before. Plus, all the contaminants listed have been used at the SSFL, found in the soil or water at some level, and are likely to be found in the future at some level. Therefore, every effort should be made to know what level these contaminants are at for the safety of the surrounding communities. The best way to protect the public is to obtain more information about the site rather than less, and it seems reasonable to monitor for all contaminants that			Staff is not recommending that any of the monitoring requirements be altered.	None required

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		were used on the site at every monitoring station. After all, it's clear that the water on the site moves through many natural and manmade pathways as discussed in #73 of the WDR with regards to TCE, which states "pathways are not always predictable and are not fully characterized; and the site is in a hilly environment with uncertain pathways and seeps which could possibly lead to surfacing of water with contamination that cannot be predicted."				
	190	It should also be mentioned that soil has been moved from one area of the SSFL site to another in the past, and even in the last year discussions have taken place that suggest that this practice could continue. There are many reasons why all contaminants should be monitored at all locations but these are just a few		X	Comment noted. The chemicals of potential concern associated with each outfall were used initially to develop the list of constituents monitored. Those chemicals that demonstrate reasonable potential are included with numeric effluent limitations. The Discharger is directed to continue monitoring of other constituents to provide a substantial data base.	None required
Teresa Jordan						
Re: TENTATIVE AMENDMENT TO WASTE DISCHARGE REQUIREMENTS AND TENTATIVE CEASE AND DESIST ORDER - THE BOEING COMPANY, SANTA SUSANA WIELD LABORATORY, CANOGA PARK, CA, NPDES NO. CA0001309, CI NO. 6027.						
	191	I am opposed to the aforementioned item for the following reasons. **GENERAL COMMENTS** #1 - Contamination from the SSFL has for years impacted the City of Simi Valley's NPDES Permit since the site's northern runoff provides the "headwaters" for the Calleguas Creek in this watershed area.		X	Comment noted.	
	192	#2 - The contamination impacts from the			Comment noted.	None

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		SSFL have for years impacted the "Calleguas MS4 permittees", *and the* "Malibu MS4 permittees" pocketbooks.				required
	193	#3 - The extensive cleanup will not lead to full compliance with the requirements of SB 990.	X		Staff agrees. The SB990 criteria continue to be developed in meetings with Boeing, DOE, NASA, and community activists. Also, the legislation specifies that DTSC is the lead agency. The action proposed for the site is an interim action to address contaminants that have been present in storm water discharges from Outfalls 008 and 009. Other contaminants located in the areas specified for action associated with the Section 13304 Order will be addressed as well. Previous interim actions at SSFL have been successful with addressing violations of perchlorate at Outfall 008 and mercury at Outfall 010.	None required
	194	4 - The SSFL will not be listed by the Governor as a USEPA Superfund site.	X		Staff concurs based on the most recent information available.	None required
	195	#5 - I do not agree with The Boeing Company's 2008 LARWQCB Pater Quality Control Basin Plan Triennial Review comments.			Comment noted.	None required
	196	#6 - The DTSC rescinded the approved use of Area IV SBA soils for use as clean backfill at the SSFL.			Comment noted.	None required
	197	#7 - The facility's RCRA RFI Groups documents are not comprehensive, nor complete.			Comment noted. However, the data required to develop the permit is collected for all priority pollutants, contaminants of concern as enumerated by DTSC and applicable Basin Plan criteria.	None required.
	198	#8 - An employee of the Groups Reports in a Conference presentation(around 2002?) was given in order to help stakeholders not protect the environment.			Comment noted.	None required
	199	#9 - Future activities on the property are unknown.			Comment noted.	

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
March 9, 2009 COMPLETED ROWD (Pages 1 to 64 of 64)						
	200	#1 - There were many missing pages.			There was a problem with the copy posted. A complete copy will be posted.	None required
	201	#2 - Page 10 of 64, X have concerns over the statements "The Expert Panel has been convened and has recommended a system of natural and engineered BMPs for both outfalls"--008 and 009 that were "grouped" together with outfalls 003 to 010--"Some of the BMPs are now in construction but others cannot be completed at this time due to the need to obtain a modification to the Special Use Permit for SSFL from the County of Ventura. Ventura County has determined that the modification of the Special Use Permit is an action subject to review pursuant to the California Environmental Quality Act (CEQA) . Boeing is proceeding with an application for the Special Use Permit modification required for the ENTS project. and Ventura County will be conducting the appropriate CEQA review".			Comment noted. The ROWD is submitted by the Permittee and was used to develop the tentative requirements.	None required
	202	#3 - Page 13 of 64, it is stated that "Boeing requests that the *constituents listed by outfall* location in Table 4 be removed from the monitoring and reporting program as these constituents have not been detected in monitoring data since 2004 by outfall location. Boeing also requests that the constituents listed by outfall location in Table 5 be removed from the monitoring program since monitoring data collected since 2004 shows that			Comment noted.	None required

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
		these constituents were never detected above water quality standards by outfall location. For these reasons, Boeing requests that each outfall be listed separately in the permit and in the analysis required in the monitoring *and reporting* program."				
	203	TENTATIVE ORDER NO. R4-2009-00xx #1 - Pages 4(bottom) and 5(top), it is stated that "In the future, Boeing plans to treat effluent from SSFL groundwater remediation operations in either a mobile of fixed hazardous waste treatment unit operating under DTSC Permit-By Rule requirements".			Boeing has selected a permanent location for the groundwater treatment system. It will be located in Area I upstream of the Outfall 011 location.	None required
	204	Ms. Owens, after reading the Water Boards' 2007-2008 Annual Enforcement Report, and the 2008 Accomplishments Report, I cannot support the SSFL's NPDES Permit.			Comment noted.	None required
Ginn Moose						
	205	I am in opposition to the proposed CA. 0001309-CI 6027 Tentative Permit Amendment. The request of Boeing that the word: constituents be removed from the monitor process, P. 13 of 64 ROWD Doc, and that, The constituents be listed separately; Out Fall #'s 003, 004, 005, 006, 007 and 009 of the Arroyo Simi Receiving Waters.			Comment noted. The request from Boeing that a number of constituents no longer be monitored was denied.	None required
	206	When you allowed the contaminated soil to be spread around you inadvertently impacted the SSFL site.			Comment noted. To date, the Regional Board has not had oversight responsibilities for any soil moving operations at the site. The proposed ISRA will include extensive monitoring of soil removed. All of the soil removed will be disposed of based on the types of contamination and the concentrations present in the soil. Every attempt will be	None required

Agency/ Letter	#	Comment	Agree	Disagree	Reply	Action Taken
					made to reuse soil determined to be clean within the same watershed where it was initially located.	
	207	Whereas; Table 2, p. 10 of 64 "the expert Panel convened has recommended BP for Fall Out 008-009, and group 003-010 to meet bench mark expiring on June 10, 2009..8&Ps can't be completed at this time due to special use permits , subject to CEQA modification review, that will be completed in Ventura. I have a problem with *that* statement. History has shown that Ventura County, specifically the Water Works Department doesn't always have the publics best interest in mind when dealings with health issues regarding the drinking water and, or waste water disposal(clean-up) at the Boeing/Rock dyne SSFL Missal Site.			Comment noted.	None required
	208	I have followed this process with the water discharge since 1992, and have found the group reports to be incomplete at best. It is imperative that the Clean *Water Act* be *of* the utmost importance when dealing with the Rocketdyne Missal Site/ now Boeing Site influence into the Publics Drinking Water. Therefore, I am in opposition to the tentative amendment to Waste Water Disposal at this time. Please take this proposal back to the table for a more realistic approach. I have enclosed a copy of the August 31, 08(R4-2007-OXXX), W.D.R. for SSFL.			Comment noted.	None required

State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
320 West 4th Street, Suite 200, Los Angeles

FACT SHEET
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT
FOR
THE BOEING COMPANY
(Santa Susana Field Laboratory)

NPDES PERMIT NO.: CA0001309
Public Notice No.: 09-077

FACILITY MAILING ADDRESS
The Boeing Company
5800 Woolsey Canyon Road
Canoga Park, CA 91304-1148

FACILITY LOCATION
The Boeing Company
Santa Susana Field Laboratory
Top of Woolsey Canyon
Simi Hills, CA 91311
Contact: Tom Gallacher
(818) 466-8161

I. Public Participation

The California Regional Water Quality Control Board, Los Angeles Region, (Regional Board) will consider, during its May 7 and 8, 2009, meeting, the tentative amendment to the waste discharge requirements (WDRs), which serve as a National Pollutant Discharge Elimination System (NPDES) permit to the Boeing Company for the Santa Susana Field Laboratory. Stakeholders are invited to contact Cassandra Owens at cowens@waterboards.ca.gov or via phone at (213) 576-6750 as the date of the board meeting approaches to obtain a more precise estimate of when the item will be called. Modifications to the NPDES permit are being considered to incorporate new information presented in the most recent Report of Waste Discharge, the most recent reasonable potential analysis and the requirements of the Section 13304 Order issued by the Regional Board on December 3, 2008. As an initial step in the process, the Regional Board staff has developed tentative WDRs. The Regional Board encourages public participation in the WDR adoption process.

A. Written Comments

Interested persons are invited to submit written comments concerning the tentative WDRs. Comments should be submitted either in person, or by mail to:

California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200

March 11, 2009
Revised: April 6, 2009
Revised: April 22, 2009

Los Angeles, CA 90013

Written comments regarding the tentative Order must be received at the Regional Board office by 5:00 p.m. on April 15, 2009, in order to be evaluated by staff and included in the Board's agenda folder.

B. Public Hearing

The proposed WDRs will be considered by the Regional Board at a public hearing. The hearing is scheduled to be held during the Regional Board meeting, which is scheduled as follows:

Date:	May 7 and 8, 2009
Time:	10:00 A.M.
Location:	Ventura County Government Center Board of Supervisors Hearing Room 800 South Victoria Avenue Ventura, California

Interested persons are invited to contact Board staff prior to the Board Meeting for a more specific estimate as to when the hearing on this matter will commence. Please check the website address (http://www.waterboards.ca.gov/losangeles/) for the most up to date public hearing location as it is subject to change. Interested persons are invited to attend. At the public hearing the Regional Board will hear testimony, if any, pertinent to the discharge, WDRs and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

C. Waste Discharge Requirements Appeals

Any person may petition the State Water Resources Control Board to review the decision of the Regional Board regarding the final Waste Discharge Requirements. The petition must be filed within 30 days of the Regional Board's action to the following address:

State Water Resources Control Board, Office of the Chief Counsel
Attn: Elizabeth Miller Jennings, Senior Staff Counsel
1001 I Street, 22nd Floor
Sacramento, CA 95812

D. Additional Information and Copies

The proposed language and other information and documents relied upon are available for inspection and copying between the hours of 8:00 a.m. and 4:30 p.m. by appointment at the following address:

Los Angeles Regional Water Quality Control Board
320 West 4th Street, Suite 200
Los Angeles, CA 90013

Arrangements for file review and/or obtaining copies of the documents may be made by calling the Los Angeles Regional Board at (213) 576-6600.

E. Register of Interested Persons

Persons wishing to comment on, or object to, the tentative waste discharge requirements (WDRs) and the tentative Cease and Desist Order (CDO), or submit evidence for the Board to consider, are invited to submit them in writing to Cassandra Owens at the above address, or send them electronically to: cowens@waterboards.ca.gov. To be evaluated and responded to by Regional Board staff, included in the Board's agenda folder, and fully considered by the Board, written comments or testimony regarding the tentative revisions must be received at the Regional Board office no later than close of business on **April 15, 2009**. Failure to comply with these requirements is grounds for the Regional Water Board to refuse to admit the proposed written comment or exhibit into evidence pursuant to section 648.4, title 23 of the California Code of Regulations.

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Board, reference this facility, and provide a name, address, and phone number.

F. Staff Contacts

If you have any question regarding this proposed action, please contact Cassandra Owens at (213) 5760-6750 or via email at cowens@waterboards.ca.gov.

II. Introduction

The Boeing Company (hereinafter Boeing or Discharger) discharged waste from its Santa Susana Field Laboratory under waste discharge requirements, which served as an NPDES permit, contained in Order No. 98-051 adopted by this Regional Board on June 29, 1998 (NPDES Permit No. CA0001309).

Boeing filed a report of waste discharge (ROWD) and applied for renewal of its WDRs and NPDES permit for discharge of wastes to surface waters. Order No. R4-2004-0111 was adopted on July 1, 2004. It incorporated effluent limitations based on the California Toxics Rule (CTR) where appropriate and added nine new compliance points.

Order R4-2006-0008 (adopted January 19, 2006), an amendment to Order No R4-2004-0111 (adopted July 1, 2004) was the result of new information incorporated into the Order after one year of compliance and routine monitoring based on Monitoring and Reporting Program (MRP) No. 6027. On March 9, 2006 Order R4-2006-0036 was adopted which incorporated total maximum daily loads (TMDLs) based effluent limitations for discharges to the Los Angeles River and to Calleguas Creek.

Subsequent to the adoption of Order R4-2004-0111, the Discharger filed a petition challenging the permit with the State Water Resources Control Board. The discharger

immediately put the petition in abeyance. After the adoption of Order R4-2006-0008 in January 2006 the discharger petitioned that order, activated the previous petition and ultimately petitioned the subsequent amendment, Order R4-2006-0036. The discharger also requested that the permit be stayed pending a decision on the permit on the basis of merit.

After considering the evidence, the State Board adopted Order WQ 2006-0007 on June 21, 2006, which vacated a previous stay order issued by one of its members, and denied Boeing's request for a stay.

On December 13, 2006, the State Board held a public hearing to consider the various petitions that the discharger had filed with respect to its permit, and thereafter adopted Order WQ 2006-0012. The Order:

- Remanded the permit to the Regional Board to revise the provisions concerning Outfalls 001, 002, 011, and 018,
- Stayed the effluent limitations at Outfalls 011 and 018 pending a determination by the Regional Board to delete either Outfalls 011 and 018 or Outfalls 001 and 002 as compliance points,
- Directed the Regional Board to issue a Cease and Desist Order with the shortest possible compliance schedule and interim effluent limitations. The effective date of the CDO was to be January 19, 2006,
- Review the permit to ensure that numeric effluent limitations for different outfalls do not count the same violation twice in such a manner as to treat a single violation as multiple violations.
- In all other respects, the petitions were denied.

Order R4-2007-0055 included the updates required by the State Board Order, updates associated with a revised ROWD submitted by the Discharger, and any new effluent limitations that are a result of the reasonable potential analysis completed on the data obtained through May 22, 2006.

On December 3, 2008, Tracy Egoscue, Executive Officer of the Regional Board, issued a California Water Code Section 13304 Order to perform interim/source removal action of soil in the areas of Outfalls 008 and 009 Drainage Areas to the Boeing Company, Santa Susana Field Laboratory. The Order directed the Discharger to cleanup and abate the wastes that are discharging to waters of the State, minimize impacts to the streambed adjacent habitat during the cleanup, protect the water quality during and after the cleanup, and restore the streambed and surrounding habitat following the cleanup.

On December 11, 2008, the Discharger submitted a new ROWD. Supplemental information was submitted on February 2, 2009, to complete the ROWD. This Order includes updates required as a result of the new ROWD, the California Water Code Section 13304 Order, and the new RPA conducted on data collected from August 2004 through December 2008.

III. Facility and Waste Discharge Description

The Santa Susana Field Laboratory (SSFL) is located at the top of Woolsey Canyon, in the Simi Hills, CA (Figure 1). The developed portion of the site comprises approximately 1,500

acres. There are 1,200-acres of undeveloped property located to the south. In 1998, undeveloped land was purchased to the north of the site. SSFL is owned by both Boeing and the National Aeronautics and Space Administration (NASA). The United States Department of Energy (DOE) also owns several buildings located in Area IV, with the land being under the ownership of Boeing.

Boeing and its predecessors' operations at SSFL since 1950 include research, development, assembly, disassembly, and testing of nuclear reactors, rocket engines, and chemical lasers. DOE conducted past operations in research and development of energy related programs, and seismic testing experiments. Current DOE activities onsite are solely related to facility closure, environmental remediation, and restoration.

SSFL was permitted to discharge excess water from its groundwater treatment system, industrial activities, onsite wastewater reclamation system, and rainfall runoff that has the potential to contain pollutants from the facilities. Approximately 60% of the discharge exited the property via two southerly discharge points (Discharge Outfalls 001 and 002) to Bell Creek, a tributary to the Los Angeles River, a water of the United States, with its confluence located near the intersection of Bassett Street and Owensmouth Avenue in Canoga Park, see Figure 1).

Past operations at the SSFL that may potentially contribute contaminants to discharges from the site include:

- Nuclear Operations, decontamination and decommissioning
- Monomethyl Hydrazine Usage,
- CTL-3 Chemical Laser Testing, and
- Energy Technology Engineering Center (ETEC) Cogeneration Operations.
- Rocket Engine and Component Testing

Nuclear Operations, decontamination and decommissioning: Nuclear research and development for the U.S. Department of Energy (DOE) and its predecessors was conducted at the SSFL from 1954 – 1989. The activities included developing and operating reactors, and fabricating and disassembling nuclear fuel. The government began to phase out the program in the 1960s. The last reactor was shut down in 1980, and nuclear research was terminated in 1989. This research and the associated activities resulted in residual contamination in Area IV.

There are currently no programs at the SSFL which employ special nuclear materials. Current decommissioning activities have reduced the inventory of radioactive waste at the SSFL to approximately 5 curies. Essentially all of this material is stored in shielded vaults located at the Radioactive Materials Handling Facility (RMHF). SSFL continues to utilize radioisotopes in the form of calibration sources which are necessary to calibrate radiation detectors and counting equipment. Periodic radiological monitoring of surface waters is conducted under the existing NPDES permit. Three radiological facilities located in Area IV of the SSFL remain to be decommissioned. Storm water run-off from Area IV of the SSFL is monitored for radioactivity. The Department of Energy (DOE) is responsible for the cost of decontamination and decommissioning.

Monomethyl Hydrazine Usage: Monomethyl hydrazine (MMH), a propellant, was used

for research, development, and testing of rocket engines at the SSFL since 1955. The MMH, which was generated from testing operations was captured and treated by an ozonation unit under a variance, granted by the Department of Toxic Substances Control (DTSC). MMH is no longer used at SSFL.

CTL-3 Chemical Laser Testing: CTL-3 Chemical Laser Testing was not operational in 2004. In 2005, limited operations resumed at the facility. There is no discharge to surface waters from this area.

Energy Technology Engineering Center (ETEC) Cogeneration Operations: The Sodium Component Testing Installation (SCTI) (cogeneration) unit of ETEC utilized two cooling tower operations, Power Pac and E-5. Both systems were shut down and will not be reactivated. The facility has been decommissioned and was demolished in July 2003.

Rocket Engine and Component Testing: An engine test consisted of a cycle of one to three engine runs lasting one to three minutes each. A test cycle may take one to two weeks to complete. Each engine run results in the use of 50,000 to 200,000 gallons of deluge/cooling water that may come in contact with fuels such as LOX or kerosene and associated combustion products. The frequency of testing historically varied depending on production requirements. In July 2004 the frequency of testing was one test cycle every one to two months. In January 2006 the Discharger indicated that the frequency of testing had significantly decreased over the past year and was likely to shut down completely during the life of this permit (expiration date June 10, 2009). The updated ROWD submitted February 2007 provided documentation that rocket engine and component testing operations at the facility had terminated.

Current and Future Operations: Since the SSFL is a test facility, it is difficult to anticipate future test projects and possible wastewater generation. Following are descriptions of expected operations:

1. Treatment Under Tiered Permitting Rules. Boeing may explore the feasibility of treating certain waste streams by either a mobile or fixed hazardous waste treatment unit operating under DTSC Permit-by-Rule requirements. Treated effluent would then be released into the ponds.

2. Unspecified waste streams generated during remediation, cleaning, assembly, testing and support operations at the facility.

Groundwater Remediation: During the early 1950s to the mid-1970s, volatile organic compounds were utilized for the cleaning of hardware and rocket engine thrust chambers, and for the cleaning of other equipment. These solvents migrated into the subsurface, contaminating groundwater primarily with trichloroethylene (TCE) and 1,2-dichloroethylene (1,2-DCE).

As a result, in July 2004 there was an extensive groundwater remediation/investigation program in progress at the SSFL, which included pumping, treating and storing groundwater at the facility. The system was composed of eight treatment systems, five being active (two currently in use) and three being inactive (standby status), which had the capability of producing up to 578 million gallons per year of groundwater treated to remove the volatile organic compounds. The treatment system was not designed to treat other

pollutants such as perchlorate or metals. The chemical treatments used in groundwater treatment operations consisted of ultraviolet light and hydrogen peroxide oxidation, carbon adsorption, and the physical treatment consisted of air stripping towers. These treatment systems were regulated under Resource Conservation and Recovery Act (RCRA) part A and part B hazardous waste permits by DTSC, and various air quality control permits issued by Ventura County. Boeing plans to treat effluent from the SSFL groundwater remediation operation in either a mobile or fixed hazardous waste treatment unit operating under DTSC Permit-By-Rule requirements. The waste stream to be treated would be classified under these regulations as non-RCRA or RCRA exempt hazardous waste. In addition, there will also be intermittent pilot projects where test wells will be drilled and groundwater treated to determine optimum locations for future wells. Effluent from the groundwater remediation operations will be discharged to a separate outfall (Outfall 019).

Sewage Treatment Plants: Historically, two package-type activated sludge sewage treatment plants (STP1 and STP3) provide secondary and tertiary treatment for the sewage. Disinfected sewage effluent from the activated sludge facilities was directed to the ponds. A third activated sludge sewage treatment plant (STP2) was available, but was used only as a pump station to STP-3 and as temporary storage of excess sewage. There were no discharges to receiving waters from STP-2.

Operations terminated at STP3 in October 2001 and at STP1 in December 2001. Recently, domestic sewage that had previously been treated at STP1 and STP3 has been diverted offsite. The STP1 and STP3 basins are used as collection points. Every few days, vacuum trucks transport the accumulated waste offsite for treatment. In July 2004, the Discharger requested that the permit continue to cover potential discharges from these plants, as it may be necessary to bring them back on line in the future.

The ROWD submitted in February 2007 indicated that discharges from the sewage treatment plants would not be resumed. Waste water collected would continue to be shipped offsite for disposal at one of the Los Angeles County Sanitation District's publicly owned treatment wastewater (POTW) facilities. The Discharger also requested that the compliance locations be deleted from this order (R4-2007-0055).

Water Reclamation System and Discharges: When in operation, effluent discharges from STP1 and STP3, the two sewage treatment plants, subsequently enter an onsite water retention system. Historically, SSFL utilized a system of natural, unlined and man-made ponds and channels to collect water from onsite operations. Water supplied to the retention system came from any one or a combination of the following sources: storm water, treated groundwater, treated sanitary sewage, rocket engine test cooling water, or domestic water purchased from an established purveyor. The water was stored in a series of 100,000-gallon steel tanks located in Area 2 called Skyline. Water from Perimeter and R-1 ponds may be pumped to the Skyline tanks where it can be transferred to Silvernale Pond. Water purchased from the Calleguas Water District was also stored at Skyline where it was used to cool test stands during engine testing and discharges to Silvernale Pond.

The water reclamation system consisted of five ponds.

R-1 Pond	capacity 3.7 million gallons
Perimeter Pond	capacity 1.3 million gallons
Silvernale Pond	capacity 6.0 million gallons

R2-B Pond	capacity 200,000 gallons
R2-A Pond	capacity 2.5 million gallons

The Coca Pond was previously used as a retention basin to collect water from the space shuttle main engine testing area. When Coca Pond was filled to capacity, it discharged to the R-2 Pond. The pond was used to collect water that leaked from the fire suppression system located in the former test area. If sufficient leaks occurred, the pond discharged to R-2.

Area I utilized the R-1 Pond as a reservoir. Water retained in the R-1 Pond was primarily comprised of storm water. Other sources included effluent from Sewage Treatment Plant 1 and treated groundwater. While this was a water reclamation system in the past, it is currently used as a retention system to minimize discharges.

Storm water collected at the facility is primarily stored at Silvernale Pond and R-2A Pond. As in Area I, the primary source of water stored in the ponds comes from storm water. Other sources included effluent from Sewage Treatment Plant 3, cooling water runoff from test operations and treated groundwater. While this was a water reclamation system in the past, it is currently used as a retention system to minimize discharges. Historically, if the supply of reclaimed water exceeded requirements, the water was discharged to the south through R-2A Pond, and then to Bell Creek through Outfall 002.

The SSFL is underlain by alluvium, weathered bedrock and unweathered bedrock. The alluvium occurs in narrow drainages and alluvial valleys and is underlain by the Chatsworth Formation. The Chatsworth Formation consists of fractured sandstone with interbeds of siltstone and claystone, which can transmit water as well as contaminants.

The groundwater system at the SSFL is divided into two aquifers; the shallow and the deep. The alluvium and weathered bedrock comprise the shallow aquifer, and the unweathered and fractured Chatsworth Formation comprise the deep aquifer.

The groundwater in the shallow aquifer generally reflects surface topography. In April 2002, groundwater depths in the shallow aquifer ranged from approximately 6 feet to 40 feet below grade. Wells in the deeper aquifer, contained groundwater between approximately 23 feet to approximately 520 feet below grade.

In dry weather, ongoing activities were normally sufficient to use the water generated from onsite groundwater treatment systems. However, in recent years this water balance has changed. In July 2004, the Discharger indicated that water added into the system from the Calleguas Water District, plus the reduction of testing activities, had caused releases from R-2A Pond (located upstream from Outfall 002) to become intermittent. During hot weather, the water released either evaporated or percolated into the ground before reaching Discharge Outfall 002. Thus, no offsite discharge of water occurred.

Historically, discharges from the groundwater treatment systems, the engine test stands and the water reclamation ponds located onsite in most cases enter naturally occurring drainage channels. Some of these channels are unlined, but portions of many of them have been lined or the flow is transported using piping to a natural drainage channel. Since the wastewater entered natural water transport channels onsite, these channels are considered waters of the United States and are thus subject to the Clean Water Act. These onsite natural drainage

channels are tributaries to Bell Creek, hence limitations for discharges to them must protect the beneficial uses for discharges to Bell Creek and the downstream reaches of the Los Angeles River. Similarly, because certain natural drainage channels are unlined and groundwater recharge is a designated beneficial use in Bell Creek and its tributaries, limitations for discharges to the channels must protect the underlying beneficial uses of the groundwater.

Many of the areas that discharged wastewater to the drainage areas and streambeds were associated with RCRA activities that are being directed by DTSC. The RCRA activities at the site include Post Closure Permits and investigation and corrective action oversight of contaminated areas. The Post Closure Permits cover the operation of the groundwater treatment systems. The investigation and corrective action oversight includes the site characterization and delineation of areas of contamination as well as subsequent cleanup operations at areas of concern onsite.

The 1995 Final SB 1082 Framework which was issued on December 14, 1995 documents the framework for implementing Health and Safety Code Section 25204.6(b) dealing with jurisdictional overlap between DTSC and the Regional Water Quality Control Boards (RWQCBs). SB 1082 requires that "sole jurisdiction over the supervision of that action [meaning oversight of those corrective action activities] is vested in either the department or the State Water Resources Control Board and the California Regional Water Quality Control Boards." Since many of the identified wastewater sources are currently involved in the RCRA corrective action or the Post Closure Permits with DTSC as the oversight agency, consistent with RCRA, DTSC will ensure that the discharges from these operations through the RCRA permitting process meet the substantive Clean Water Act requirements. Regional Board staff will provide appropriate comments during the revision of RCRA permits to ensure the Clean Water Act, Porter-Cologne Act, and the Basin Plan requirements are met. However, at all times, the final downstream Outfalls 001 and 002 will be regulated by the accompanying NPDES permit and will implement relevant water quality standards.

There were several other operations that discharged wastewater to the onsite drainageways and streambeds which were not included in the RCRA corrective action. Order R4-2004-0111 covered these activities.

The operations evaluated at SSFL, the agency (Regional Board or DTSC) with primary oversight authority, and the NPDES outfall number associated with the operation if the Regional Board has oversight are listed below and in Figure 2.

	Operation	NPDES Outfall No.	Agency
1.	Wastewater and Storm water runoff	001	RWQCB
2.	Wastewater and Storm water runoff	002	RWQCB
3.	Storm water Radioactive Material Handling Facility	003	RWQCB
4.	Storm water Sodium Reactor Exp.	004	RWQCB
5.	Storm water Sodium Burn Pit 1	005	RWQCB
6.	Storm water Sodium Burn Pit 2	006	RWQCB
	Operation	**NPDES**	**Agency**

		Outfall No.	
7.	Storm water Building 100	007	RWQCB
8.	Storm water Happy Valley	008	RWQCB
9.	Storm water WS-13 Drainage	009	RWQCB
10.	Storm water Building 203	010	RWQCB
11.	R-1 Pond	-----	DTSC
12.	Perimeter Pond	011	RWQCB
13.	R-2 Ponds (R-2A and R-2B)	-----	DTSC
14.	R-2 Spillway	018	RWQCB
15.	Silvernale Pond	-----	DTSC
16.	Alfa Test Stand	012	RWQCB
17.	Bravo Test Stand	013	RWQCB
18.	WS-5 Groundwater Treatment System (GWTS)	-----	DTSC
19.	RD-9 GWTS	-----	DTSC
20.	Alfa GWTS	-----	DTSC
21.	Delta GWTS	-----	DTSC
22.	STLV-IV GWTS	-----	DTSC
23.	Area 1 Road GWTS/AST	-----	DTSC
24.	Bravo GWTS/AST	-----	DTSC
25.	Canyon GWTS/AST	-----	DTSC
26.	Interim GWTS near FSDF*	-----	DTSC
27.	Interim GWTS near Bldg 59*	-----	DTSC
28.	Interim GWTS near RMHF*	-----	DTSC
29.	APTF	014	RWQCB
30.	STP-1 – effluent	015	RWQCB
31.	STP-2 – effluent	016	RWQCB
32.	STP-3 – effluent	017	RWQCB
33.	Groundwater Treatment System	019	RWQCB

* Implemented in Interim Measures at the site. If the systems continue they will be included in the revised Post Closure Permit.

Operations enumerated in items 1 through 32 were included in Order R4-2004-0111 and subsequent revisions (Orders R4-2006-0008 and R4-2006-0036). Item 33 identifies a new outfall that is added in this Order (R4-2007-0055). The updated ROWD submitted on February 20, 2007, included a request to discharge treated groundwater from a new groundwater treatment system, operating under Permit-By-Rule requirements, to the streambed downstream of Outfall 011 and upstream of Outfall 001. The treated groundwater is a wastewater discharged from a point source. The discharge will be regulated by the RWQCB in this permit. Order R4-2004-0111 and subsequent revisions did not regulate treated groundwater at the point of discharge. However, once the treated groundwater was mixed with wastewater from the sewage treatment plants, rocket engine test operations, and storm water runoff in the onsite water reclamation/retention system and was subsequently discharged via Outfalls 011, 018, 001, and 002 it was regulated as a component of the mixed wastewater. The new compliance point (Outfall 019) will be the compliance point for the treated groundwater only. The groundwater treatment systems listed in the table above will be taken off line and the new groundwater treatment system operating under Permit-By-Rule

requirements are permitted in Order R4-2007-0055. The new compliance point is included in the previous table.

Operations at the test stands (Outfalls 012 -014) and the sewage treatment plants (Outfalls 015 – 017) have ceased. No further process waste discharges are expected from these areas.

Storm Water Discharges

In 1989, EPA conducted an investigation and submitted a report on SSFL environmental issues. The report specified under the recommended and planned actions that the Regional Board was to use the Clean Water Act to ensure run-off from the northwest side of Area IV was not contaminated. In response to the request, Boeing developed a surface water monitoring program for the northwest slope area that was subsequently approved by EPA and implemented.

The topography of the SSFL is such that approximately 70% of rainfall runoff is routed to one of the two southerly-located retention ponds and is discharged from the site via Discharge Outfalls 001 or 002. Storm water runoff from the northwest slope of the facility is monitored at Discharge Outfalls 003, 004, 005, 006, 007, 009, AND 010 which discharge towards the Arroyo Simi. The outfall locations near the Northwest slope are located such that they capture runoff from past and existing radiological facilities.

There is one more storm water monitoring location Discharge Outfall 008 (formerly referred to as Happy Valley and Happy Valley 1). This outfall captures runoff from an area that has previously been used for operations that involved perchlorate and monitoring events have yielded detections of perchlorate in the storm water runoff. Storm water from Happy Valley flows to Dayton Canyon Creek. The flow from Dayton Canyon Creek joins Chatsworth Creek, which flows south to Bell Creek southwest of the intersection of Shoup Avenue and Sherman Way. Bell Creek flows east to the Los Angeles River. Order R4-2004-0111 implements effluent limitations for conventional pollutants and perchlorate at Outfall 008. Monitoring for the emergent chemicals and EPA priority pollutants except asbestos was also required in that Order.

The objective of this Order is to protect the beneficial uses of receiving waters. To meet this objective, storm water runoff discharges from the SSFL are subject to requirements stipulated in this NPDES permit and the Discharger will be required to comply with all applicable provisions of the Storm Water Pollution Prevention Plan (Attachment A of the Order). This plan includes requirements to develop, implement, and when appropriate update a Storm Water Pollution Prevention Plan (SWPPP) along with Best Management Practices (BMPs) that will prevent all pollutants from contacting storm water and with the intent of keeping all contaminants of concern from moving into receiving waters.

Storm water sampling events during 1999, 2000 and 2001 yielded exceedances of existing effluent limitations for several contaminants of concern. These effluent violations indicate that the implementation of best management practices (BMPs) to control the transport of contaminants off site were not effective. Storm water runoff exiting the northern boundary of the site travels via Meier and Runkle Canyons to the Arroyo Simi, a tributary of Calleguas Creek. Hence, this Order includes effluent limitations for the storm water discharges from the site for priority pollutants with reasonable potential.

In 2004, site inspections resulted in the identification of two other storm water monitoring locations:

- WS-13 Drainage Area — Discharge Outfall 009
- Building 203 — Discharge Outfall 010

Storm water runoff from the area that drains to discharge points 001, and 002 is estimated at 34 and 51 million gallons per day (MGD) (based on a 24-hour duration, 10-year return storm). Historically, this runoff was mixed with industrial waste collected in the ponds prior to discharge. Discharges from Outfall 008 are composed solely of storm water runoff.

The estimated flow from the area that drains storm water only from the northwest slope and discharges it via discharge points 003, 004, 005, 006, 007, 009 and 010 and via various drainage channels into Meier, Runkle and Woolsey Canyons is 35 MGD. (Figure 2).

The locations and the associated drainage areas are listed below for each of the seven storm water only discharge locations:

Discharge Outfall	Latitude (North)	Longitude (West)	Vicinity
*003 (RMHF)	34° 14' 4.0"	118° 42' 38.4"	Radioactive Materials Handling Facility
*004 (SRE)	34° 14' 9.1"	118° 42' 23.9"	Former Sodium Reactor Experiment
*005 (SBP-1)	34° 13' 48.1"	118° 43' 3.9"	Former Sodium Burn Pit 1
*006 (SBP 2)	34° 13' 50.7"	118° 42' 59.9"	Former Sodium Burn Pit 2
*007 (B100)	34° 13' 50.2"	118° 42' 52.5"	Building 100
009(WS-13)	34° 14' 17"	118° 41' 38"	WS-13 Drainage Area
010(Bldg. 203)	34° 14' 17"	118° 41' 56"	Building 203

* Established after EPA investigation.

The storm water samples collected are analyzed for radioactivity and for a number of other priority pollutants that may be present.

There is no flow from these locations except during heavy rainfall. For purposes of access and safety, these sampling stations have been established inside the SSFL northwest property boundary. The stations are located in close proximity to past and/or existing radiological facilities or other operations, as noted in the vicinity column above.

Storm water from APTF flows toward Bell Creek and the Los Angeles River. Current operations at the facility have shut down. Past operations included small engine testing using kerosene (RP-1), hydrogen, potentially alcohol, methanol, peroxide, and liquid oxygen (LOX). Nitrogen was also used for purge gas. After testing the staging areas were not routinely washed down to remove residual contaminants from the test operations. During normal operations testing may have occurred during storm events.

It is likely that contaminants associated with the engine test material would be present in the storm water runoff from the area. Hence, this permit requires that the storm water runoff from the area be monitored. If the monitoring data indicates reasonable potential,

the permit will be reopened and effluent limitations will be implemented. In July 2004, the Discharger indicated that the standard operating procedures for the area in the future would include washdowns of the staging areas after engine tests. The water associated with the washdown would be collected and disposed of offsite. If testing operations occurred during storm events, the Discharger would collect the storm water runoff from the staging area for offsite disposal. If washdowns did not occur after test operations or if testing occurs during storm events and the water is not collected for offsite disposal, the Discharger would be required to sample it as stipulated for other storm water monitoring locations.

Historical engine testing in the area has likely resulted in residual contamination. Therefore, this permit (Order R4-2007-0055) includes requirements to monitor storm water runoff from the area (Outfall 014).

Compliance History

Discharges from the Santa Susana Field Laboratory historically, have exceeded effluent limitations included in the NPDES permit constituents that are present at elevated concentrations onsite. These constituents with elevated concentrations are present as a result of past operations. The permit exceedances have resulted in a number of enforcement actions. Following is a summary of the enforcement actions to date.

A Notice of Violation (NOV) was issued for exceedances occurring after January 2000 on June 27, 2001 and SSFL provided additional information. A revised NOV was issued on October 19, 2001 and the Administrative Civil Liability complaint was issued on April 29, 2002. The Discharger completed the stipulated requirements on October 9, 2002.

On February 6, 2004 a NOV was issued for the violations identified in the Table that occurred prior to January 2000, and subsequent to the previously mentioned NOV that have not been adequately addressed by the Discharger.

Order No. R4-2004-0111 was adopted on July 1, 2004 and implemented effluent limitations that are more stringent than those from Order 98-051. That Order was updated in January 2006 and in March 2006. The discharger has reported numerous violations of the effluent limitations included in these orders. Notices of Violation were issued on February 6, 2004, March 14, 2005, October 7, 2005, April 20, 2006, and November 7, 2006, for violations included in self monitoring reports submitted through May 31, 2006.

The Regional Board on July 25, 2007, issued Complaint No. R4-2007-0035 for Administrative Civil Liability against the Boeing Company in the amount of $471,190. On August 27, 2007, Boeing waived its right to a hearing and submitted full payment of the civil liability. A Notice of Conclusion of Enforcement Action was issued referencing this case on September 11, 2007.

On June 11, 2008, the Regional Board issued a NOV for 24 violations of Order Nos. R4-2004-0111, R4-2006-0008, R4-2006-0036, and R4-2007-0055. That NOV included violations at Outfalls 003, 004, 006, 009, 010, 011, and 018 for 4th Quarter 2006 through the 1st Quarter of 2008. There were no discharges in the 2nd and 3rd Quarters of 2008. The 4th Quarter monitoring yielded exceedances of pH and chronic toxicity at Outfall 004 and an exceedance of pH at Outfall 006.

IV. Applicable Statutes, Plans, Policies, and Regulations

A. *Clean Water Act* (CWA). The federal CWA requires that any point source discharge of pollutants to a water of the United States must be done in conformance with an NPDES permit. NPDES permits establish effluent limitations that incorporate various requirements of the CWA designed to protect water quality.

B. *Water Quality Control Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (Basin Plan). The Basin Plan contains water quality objectives and beneficial uses for inland surface waters and for the Pacific Ocean. The receiving water for storm water runoff from Outfall 008 (Happy Valley) is Dayton Canyon Creek which flows to Chatsworth Creek. Chatsworth Creek merges with Bell Creek and Bell Creek flows into the Los Angeles River. The receiving water for the permitted discharge of the treated effluent via Outfalls 001, 002, 011 and 018 is Bell Creek a tributary to the Los Angeles River. The beneficial uses of the Dayton Canyon Creek, Bell Creek and the Los Angeles River are:

Dayton Canyon Creek – Hydrologic Unit 405.21

Existing: wildlife habitat
Intermittent: groundwater recharge, contact and non-contact water recreation; warm freshwater habitat.

Bell Creek – Hydrologic Unit 405.21

Existing: wildlife habitat
Intermittent: groundwater recharge, contact and non-contact water recreation; warm freshwater habitat.

The Los Angeles River upstream of Figueroa Street – Hydrologic Unit 405.21:

Existing: groundwater recharge; contact and non-contact water recreation, warm freshwater habitat; wildlife habitat; and wetland habitat.
Potential: industrial service supply.

Los Angeles River downstream of Figueroa Street –Hydrologic Unit 405.15

Existing: groundwater recharge, contact and non-contact water recreation, and warm freshwater habitat.
Potential: industrial service supply and wildlife habitat.

Los Angeles River downstream of Figueroa Street – Hydrologic Unit 405.12

Existing: groundwater recharge; contact and noncontact water recreation; warm freshwater habitat; marine habitat; wildlife habitat; and rare, threatened, or endangered species.
Potential: industrial service supply; industrial process supply; migration of aquatic organisms; spawning, reproduction, and/or early development; and shellfish harvesting.

Los Angeles River Estuary – Hydrologic Unit 405.12

Existing: industrial service supply; navigation; contact and non-contact water recreation; commercial and sport fishing; estuarine habitat; marine habitat; wildlife habitat; rare, threatened, or endangered species; migration of aquatic organisms; spawning, reproduction, and/or early development; and wetland habitat.
Potential: shellfish harvesting.

Dayton Canyon Creek, Bell Creek and all of the reaches of the Los Angeles River listed except for the estuary also have municipal and domestic supply (MUN) listed as a potential beneficial use with an asterisk in the Basin Plan. This is consistent with Regional Board Resolution 89-03; however the Regional Board has only conditionally designated the MUN beneficial uses and at this time cannot establish effluent limitations designed to protect the conditional designation.

The storm water runoff from Outfalls 003 through 007, 009 and 010 discharges from the SSFL exit the site to the northwest and flows down the Meier and Runkle Canyons toward the Arroyo Simi. The Arroyo Simi is tributary to the Calleguas Creek. The beneficial uses for the receiving water are listed below.

Arroyo Simi – Hydrologic Unit 403.62

Existing: wildlife habitat, rare, threatened, or endangered species habitat,
Intermittent: industrial process supply, groundwater recharge, freshwater replenishment, contact and non-contact water recreation, warm freshwater habitat;

Arroyo Las Posas – Hydrologic Unit 403.62

Existing: groundwater recharge, freshwater replenishment, contact and non-contact water recreation, warm freshwater habitat, wildlife habitat,
Potential: industrial process supply, industrial service supply, agricultural supply, and cold freshwater habitat.

Calleguas Creek – Hydrologic Unit 403.12

Existing: industrial service supply, industrial process supply, agricultural supply, groundwater recharge, contact and non-contact water recreation, warm freshwater habitat, and wildlife habitat,

Calleguas Creek – Hydrologic Unit 403.11

Existing: agricultural supply, groundwater recharge, freshwater replenishment; contact and non-contact water recreation, warm freshwater habitat, cold freshwater habitat, wildlife habitat, rare, threatened or endangered species, and wetland habitat,

Calleguas Creek Estuary – Hydrologic Unit 403.11

Existing: noncontact water recreation, commercial and sport fishing, estuarine habitat, wildlife habitat, rare, threatened or endangered species, migration of aquatic organisms, spawning, reproduction, and/or early development, and wetland habitat;
Potential: navigation and water contact recreation.

Mugu Lagoon – Hydrologic Unit 403.11

Existing: navigation, non-contact water recreation, commercial and sport fishing, estuarine habitat, marine habitat, preservation of biological habitats, wildlife habitat, rare, threatened or endangered species, migration of aquatic organisms, spawning, reproduction, and/or early development, shellfish harvesting, and wetland habitat,
Potential: water contact recreation.

All of the reaches of Calleguas Creek except the estuary also include conditional municipal and domestic supply designations as an intermittent or potential beneficial use in the Basin Plan.

C. **Ammonia Basin Plan Amendment**. The 1994 Basin Plan provided water quality objectives for ammonia to protect aquatic life, in Tables 3-1 through Tables 3-4. However, those ammonia objectives were revised on April 25, 2002, by the Regional Board with the adoption of Resolution No. 2002-011, *Amendment to the Water Quality Control Plan for the Los Angeles Region to Update the Ammonia Objectives for Inland Surface Waters (including enclosed bays, estuaries and wetlands) with Beneficial Use designations for protection of Aquatic Life*. The ammonia Basin Plan amendment was approved by the State Board, the Office of Administrative Law, and USEPA on April 30, 2003, June 5, 2003, and June 19, 2003, respectively. Although the revised ammonia water quality objectives may be less stringent than those contained in the 1994 Basin Plan, they are protective of aquatic life and are consistent with USEPA's 1999 ammonia criteria update.

D. ***Title 22 of the California Code of Regulations***. The California Department of Health Services established primary and secondary maximum contaminant levels (MCLs) for a number of chemical and radioactive contaminants. These MCLs can be found in Title 22, California Code of Regulations (Title 22). Chapter 3 of the Basin Plan incorporates portions of Title 22 by reference. In addition, narrative objectives require the ground waters shall not contain taste or odor-producing substances in concentrations that affect beneficial uses. The secondary MCLs in Title 22 are designed to ensure that the water's taste and odor does not affect its suitability as drinking water. Title 22 MCLs have been incorporated into NPDES permits and Non-Chapter 15 WDRs to protect the municipal and domestic supply (MUN) and groundwater recharge (GWR), where the underlying groundwater has a designated MUN beneficial use.

Groundwater Recharge. Sections of Bell Creek and Arroyo Simi, near the SSFL discharge points, are designated as GWR indicating that groundwater recharge is a beneficial use. Surface water from the Bell Creek enter the Los Angeles River

Watershed. The headwaters of the Los Angeles River originate in the Santa Monica, Santa Susana, and San Gabriel Mountains. Four basins in the San Fernando Valley area contain substantial deep groundwater reserves and are recharged mainly through runoff and infiltration.

Surface water discharges from the north west edge of the SSFL are directed to Arroyo Simi, a tributary located in the Calleguas Creek Watershed. Supplies of groundwater are critical to agricultural operations and industry (sand and gravel mining) in this watershed.

Moreover, much of the population in the watershed relies upon groundwater for drinking. Since groundwater from these basins is used to provide drinking water to a large portion of the population, Title 22-based limitations are needed to protect that drinking water supply. By limiting the contaminants in the SSFL discharges, the amount of pollutants entering the surface waters and groundwater basins are correspondingly reduced. Once groundwater basins are contaminated, it may take years to clean up, depending on the pollutant. Compared to surface water pollution, investigations and remediation of groundwater are often more difficult, costly, and extremely slow. For these reasons Title 22-based limitations will remain in the NPDES permit where there is reasonable potential.

On December 17, 2003, the Regional Board received the December *2003 Technical Memorandum Analysis of Groundwater Recharge, Santa Susana Field Laboratory, Ventura County, California*, prepared by Montgomery Watson Harza on behalf of the Boeing Company. This document was submitted to DTSC in order to present a qualitative and quantitative analysis of groundwater recharge at the Santa Susana Field Laboratory. Regional Board staff have also reviewed this document and find that a reasonable conclusion for the amount of rainfall that infiltrates soil using a water balance method is between 23% to 26%. Using a chloride mass balance method resulted in a range of 1% to 12% rainfall infiltration. As these calculations by different methodologies differ significantly and are inconclusive, Regional Board staff find that there is insufficient data to suggest that rainfall will not significantly recharge groundwater in the underlying surficial soils, weathered and fractured bedrock. In addition, there has been no site-specific soil attenuation factor/model submitted for Regional Board staff review. Inasmuch, those limitations placed in this Order to protect groundwater recharge beneficial uses and beneficial uses of underlying groundwater apply at end-of-pipe.

Notification Levels. California Department of Health Services (DHS) establishes Notification Levels (NLs), or health based advisory levels, for chemicals in drinking water that lack MCLs. Through 2004, the Notification Levels were referred to as Action Levels (ALs). An AL is the concentration of a chemical in drinking water that is considered not to pose a significant risk to people ingesting that water on a daily basis. ALs may be established by DHS for non-regulated chemical contaminants when one of the following occurs:

1. A chemical is found in an actual or proposed drinking water source, or
2. A chemical is in proximity to a drinking water source, and guidance is needed, should it reach the source.

An AL is calculated using standard risk assessment methods for non-cancer and cancer endpoints, and typical exposure assumptions, including a 2-liter per day ingestion rate, a 70-kilogram adult body weight, and a 70-year lifetime. For chemicals that are considered carcinogens, the AL is considered to pose "de minimus" risk, i.e., a theoretical lifetime risk of up to one excess case of cancer in a population of 1,000,000 people – the 10^{-6} risk level. (In that population, approximately 250,000 – 300,000 cases of cancer would be anticipated to occur naturally.) ALs may be revised from time to time to reflect new risk assessment information. Chemicals for which ALs are established may eventually be regulated by MCLs, depending on the extent of contamination, the levels observed, and the risk to human health. A number of the contaminants for which action levels were originally established now have MCLs.

In 1997, DHS established an 18 μg/L AL for perchlorate. DHS used the upper value of the 4 to 18 μg/L range that resulted from the "provisional" reference dose that USEPA prepared in support of its Superfund activities. A revised external review draft perchlorate reference dose corresponding to a drinking water concentration of 1 μg/L was released in 2002. DHS concluded that the AL needed to be revised downward. On January 18, 2002, DHS reduced the perchlorate AL to 4 μg/L. The revised AL coincided with the analytical detection limit for purposes of reporting and was at the lower end of the 4 to 18 μg/L range from the USEPA 1992-1995 assessment. The Public Health Goal (PHG) for perchlorate was developed by Office of Environmental Health Hazard Assessment based on a contemporary health risk assessment. This new information was provided to DHS and on March 11, 2004, the AL for perchlorate was revised to 6 μg/L, a value identical to the PHG that will be used by DHS to develop the MCL for perchlorate.

Perchlorate and its salts are used in, but not limited to, solid propellant for rockets, missiles, and fireworks. The defense and aerospace industries purchase more than 90 percent of all the perchlorate manufactured. Perchlorate has historically been used at SSFL and thus is considered a chemical of concern at the site. Monitoring data collected during the tenure of the current permit indicates that perchlorate was present in the storm water runoff in Happy Valley and it has been detected in some of the groundwater wells utilized in the cleanup operations ongoing with DTSC oversight.

Perchlorate can interfere with iodide uptake by the thyroid gland; this can result in a decrease in the production of thyroid hormones, which are needed for prenatal and postnatal growth and development, as well as for normal body metabolism. Neither, the CTR, NTR or the Basin Plan has requirements stipulated for perchlorate. Since there is no drinking water standard, or maximum contaminant level (MCL), the DHS uses the AL as an advisory level. The Regional Board, exercising its best professional judgement, in the review of the "best available science" has in the past considered and used ALs when deemed appropriate to establish final effluent limitations in WDRs and NPDES permits adopted by this Board, to implement the Basin Plan narrative WQO, *"all waters shall be maintained free of toxic substance that produce detrimental physiological responses in human, plant, animal, or aquatic life,"* and to prevent degradation of valuable groundwater sources of drinking water.

E. Under title 40 Code of Federal Regulations (40 CFR) section 122.44(d), *Water Quality Standards and State Requirements*, "Limitations must control all pollutants or pollutant parameters (either conventional, non-conventional, or toxic pollutants), which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." Where numeric effluent limitations for a pollutant or pollutant parameter have not been established in the applicable state water quality control plan, 40 CFR section 122.44(d)(1)(vi) specifies that water quality-based effluent limitations (WQBELs) may be set based on United States Environmental Protection Agency (USEPA) criteria, and may be supplemented where necessary by other relevant information to attain and maintain narrative water quality criteria, and to fully protect designated beneficial uses.

F. Section 402(p) of the federal Clean Water Act (CWA), as amended by the Water Quality Act of 1987, requires NPDES permits for storm water discharges. The Discharger in addition to meeting the effluent limitations included in this permit for storm water discharges only will be required to develop and implement a SWPPP as stipulated in Finding 27 of the Waste Discharge Requirements. These requirements as they are met will protect and maintain existing beneficial uses of the receiving water.

G. On May 18, 2000, the USEPA promulgated numeric criteria for priority pollutants for the State of California [known as the *California Toxics Rule* (CTR) and codified as 40 CFR section 131.38]. On March 2, 2000, the State Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy or* SIP). The SIP was effective on April 28, 2000 with respect to the priority pollutant criteria promulgated for California by the USEPA through National Toxics Rule (NTR) and to the priority pollutant objectives established by the Regional Boards in their Basin Plans, with the exception of the provision on alternate test procedures for individual discharges that have been approved by the USEPA Regional Administrator. The alternate test procedures provision was effective on May 22, 2000. The SIP was effective on May 18, 2000, with respect to the priority pollutant criteria promulgated by the USEPA through the CTR. The State Board adopted an amendment to the SIP on February 24, 2005, that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control.

H. Section 402(o) of the Clean Water Act and 40 CFR section 122.44(l) require that water-quality based effluent limitations in re-issued permits must be at least as stringent as in the existing permit (anti-backsliding). There are, however, exceptions to the prohibition which are codified in sections 303(d)(4) and/or 402(o)(2) of the Clean Water Act. Hence, many of the limitations from the existing waste discharge requirements contained in Regional Board Order No. 98-051, adopted by the Regional Board on June 29, 1998 have been included in this Order. For those limitations carried forward, the Regional Board has determined that there is reasonable potential for the pollutant to cause or contribute to an exceedance of water quality standards in accordance with State Board Order No. WQO 2003-0009. Reasonable potential is

determined using the procedures established in the SIP, informed by professional judgment.

I. Antidegradation. On October 28, 1968, the State Board adopted Resolution No. 68-16, Maintaining High Quality Water, which established an antidegradation policy for State and Regional Boards. Similarly, the CWA (section 304(d)(4)(B)) and USEPA regulations (40 CFR section 131.12) require that all NPDES permitting actions be consistent with the federal antidegradation policy. Specifically, waters that are of a higher quality than needed to maintain designated beneficial uses shall be maintained at the higher water quality unless specific findings are made.

J. *Watershed Management Approach.* The Regional Board has implemented a Watershed Management Approach, in accordance with *Watershed Protection: A Project Focus* (EPA841-R-95-003, August 1995), to address water quality protection in the Los Angeles Region. Programs covered under the Watershed Management Approach include regulatory (e.g., NPDES), monitoring and assessment, basin planning and water quality standards, watershed management, wetlands, TMDLs, 401 certifications, groundwater (as appropriate), and nonpoint source management activities. The Watershed Management Approach integrates the Regional Board's many diverse programs, particularly, permitting, planning, and other surface-water oriented programs. It emphasizes cooperative relationships between regulatory agencies, the regulated community, environmental groups, and other stakeholders in the watershed to achieve the greatest environmental improvements with the resources available. This approach facilitates a more accurate assessment of cumulative impacts of pollutants from both point and nonpoint sources.

The Los Angeles River watershed is one of the largest in the Region. The headwaters of the Los Angeles River originate in the Santa Monica, Santa Susana, and San Gabriel Mountains. The river flows through industrial and commercial areas and is bordered by rail yards, freeways, and major commercial and government buildings. The Los Angeles River tidal prism/estuary begins in Long Beach at Willow Street and runs approximately three miles before joining with Queensway Bay located between the Port of Long Beach and the city of Long Beach.

The wastewater discharge from Outfalls 001 and 002 at the SSFL enters Bell Creek near the headwaters of the Los Angeles River. The storm water runoff from Happy Valley (Outfall 008) exits the site via Dayton Canyon Creek which flows to Bell Creek and subsequently the Los Angeles River.

The other storm water runoff exiting the SSFL site does so near the northwest site boundary from Outfalls 003 through 007, 009 and 010. The receiving water for the storm water runoff from these locations is the Arroyo Simi, a tributary of Calleguas Creek. The Calleguas Creek Watershed extends from the Santa Monica Mountains and Simi Hills in the south, to the Santa Susana Mountains, South Mountain, and Oak Ridge in the north. Land uses vary throughout the watershed. Urban developments are generally restricted to the city limitations of Simi Valley, Moorpark, Thousand Oaks, and Camarillo. Agricultural activities are spread out along valleys and on the Oxnard Plain.

The storm water discharge exits the site and travels down Meier and Runkle Canyons towards the Arroyo Simi. Most of the land use around the facility is open area. Overall the Calleguas Creek Watershed is considered an impaired watershed. It appears that the sources of many of these pollutants are agricultural activities. Approximately fifty percent of the watershed is still open space although there is a severe lack of benthic and riparian habitat present. The discharge, when it is sufficient to reach the Arroyo Simi, enters it in Reach 1 – Hydrological Unit 403.62.

K. *303(d) Listing of Impaired Waterways.* Bell Creek, which is the receiving water for the wastewater discharge from Outfalls 001, and 002 is on the 2002 303(d) list with high coliform count as the stressor.

The storm water runoff discharge from Outfalls 003 through 007, 009 and 010, when it is sufficient to reach the Arroyo Simi, enters it in Reach 1 – Hydrological Unit 403.62. The stressors listed in the 2002 State Board's California 303(d) list for this reach of Arroyo Simi are ammonia, boron, chloride, sulfates, fecal coliform, organophosphorous pesticides, sediment/siltation, and total dissolved solids.

L. Total Maximum Daily Load (TMDL)

The TMDL development for the Los Angeles River watershed and for Calleguas Creek has been developed for a number of the constituents on the California State Water Board 2002 303(d) list. The WQBELS in this permit have been analyzed to ensure they are consistent with the assumptions and requirements of the WLAs in those TMDLS. The TMDLs, which are not scheduled for completion within the lifetime of this permit, will include WLAs for the 303(d) listed pollutants. When each TMDL is complete, the Regional Board will adopt WQBELs consistent with the corresponding WLAs. If authorized, a time schedule may be included in a revised permit to require compliance with the final WQBELs.

M. LA River Nitrogen (Nutrients) TMDL. The TMDL for Nitrogen (nutrients) in the Los Angeles River received Regional Board approval on July 10, 2003 (Resolution No. 03-009) and State Board approval with adoption of Order 2003-0074 on November 19, 2003. Office of Administrative Law (OAL) and USEPA approval dates were February 27, 2003 and March 18, 2003, respectively. The Regional Board filed a Notice of Decision with the California Resources Agency on March 23, 2004 and the TMDL was effective as of that date. The Los Angeles River Nutrient TMDL revision with Interim WLAs was approved by the Regional Board on December 4, 2003 (Resolution No. 2003-016). The State Board approved the TMDL with Resolution 2004-0014 on March 24, 2004. OAL approved it on September 27, 2004, and the effective date for the Order was September 27, 2004.

The TMDL includes numeric targets for ammonia as nitrogen (NH3-N), Nitrate-nitrogen and nitrite-Nitrogen within Reach 5 (within Sepulveda Basin), Reach 3 (Riverside Drive to Figueroa Street), and the Burbank Western Channel. Waste loads are allocated to minor point sources in these reaches that are enrolled in industrial and construction storm water permits.

N. LA River Metals TMDL. The current version of the TMDL for metals in the Los Angeles River was approved by the Regional Board during the September 6, 2007

hearing (Resolution No. R4-2007-014). State Board approved the TMDL on June 17, 2008. OAL approved the TMDL on October 14, 2008, and EPA approved it on October 29, 2008. The TMDL for metals in storm water is in effect for discharges to the specified reaches of the Los Angeles River.

The metals TMDL implements numeric water quality targets that are based on objectives established by USEPA in the CTR. Targets for copper, lead, zinc and/or selenium (total recoverable) are established in designated reaches of the Los Angeles River. Separate water quality targets are established for dry and wet weather discharges.

The TMDL for metals in the Los Angeles River includes an implementation schedule for non-storm water NPDES permits (including POTWs, other major, minor, and general permits). SSFL is included in this group of permittees. The implementation schedule states that NPDES permits shall achieve waste load allocations, which shall be expressed as NPDES water quality-based effluent limitations. Compliance schedules may allow up to five years in individual NPDES permits to meet permit requirements.

Discharges from SSFL, of wastewater and of storm water runoff only, exiting the site enter Bell Creek or Dayton Canyon Creek. Dry weather numeric water quality targets for copper, lead, and selenium are established for Bell Creek in the TMDL. WLAs are assigned to all point source discharges to Bell Creek and tributaries to Bell Creek. Wet-weather numeric targets for cadmium, copper lead and zinc are established for Los Angeles (LA) River Reach 1 in the TMDL. WLAs are assigned to all point source discharges to LA River Reach 1 and all upstream reaches and tributaries to Reach 1 (including Bell Creek and tributaries to Bell Creek). Hence, effluent limitations for cadmium, copper, lead, zinc, and selenium in discharges to Bell Creek, Dayton Canyon Creek, or any tributaries of the LA River will be based on WLAs established by the TMDL or existing permit limitations, whichever are more protective.

O. LA River Trash TMDL. The Los Angeles River Trash TMDL was adopted by the Regional Board on September 19, 2001. The TMDL established a numeric target of zero trash in the river. The TMDL was to be implemented via storm water permits in a phased reduction for a period of ten years. The LA River Trash TMDL was approved by the State Water Resources Control Board on February 19, 2002, Office of Administrative Law on July 16, 2002 and by the US EPA on August 1, 2002. The TMDL became effective on August 28, 2002.

There were a number of challenges to the LA River Trash TMDL. The consideration of the challenges resulted in a requirement that the TMDL be set aside and not implemented until the California Environmental Quality Act (CEQA) requirements have been satisfied. On June 8, 2006, the Los Angeles Regional Water Quality Control Board adopted a resolution to set aside the adopted TMDL (06-013). On July 17, 2006, the State Board adopted Resolution 2006-0051, setting the TMDL aside.

The Regional Board on August 9, 2007, adopted a new TMDL for trash in the Los Angeles River Watershed that includes WLAs of zero for trash. The TMDL became effective July 17, 2006. The TMDL is implemented through storm water permits and

via the authority vested in the Executive Officer by section 13267 of the Porter-Cologne Water Quality Control Act. It requires phased reductions in the amount of trash over a nine year period. No WLAs were established for individual permittees.

P. Calleguas Creek Chloride (Salts) TMDL. On March 22, 2002, the consent decree deadline for the establishment of a chloride TMDL, USEPA Region 9 established the Calleguas Creek Total Maximum Daily Load for chloride. The TMDL adopted by USEPA was based largely on the technical efforts produced by the Regional Board staff.

The Calleguas Creek Watershed Group in collaboration with USEPA Region 9 and the Regional Board is developing the *Calleguas Creek Watershed Salts TMDL Work Plan*. The work plan addresses chloride, TDS, sulfate and boron in the watershed. The Regional Board and USEPA may use the work product from the Calleguas Creek Watershed Group to establish a subsequent TMDL for chloride in the Calleguas Creek Watershed.

Discharges from SSFL enter the Calleguas Creek Watershed in Arroyo Simi Reach 7, which is included on the 303 (d) list as a chloride water quality limited segment in the Calleguas Creek Watershed. There are no waste load allocations (WLAs) for point source discharges or load allocations (LAs) for nonpoint sources in effect under storm conditions in the TMDL. Since all discharges from the SSFL to the Arroyo Simi occur as a result of storm water runoff, no chloride WLAs will be included in this Order for discharges from Outfalls 003 through 007, 009 and 010 to Arroyo Simi. Based on existing data, SSFL does not appear to contribute chloride loading to the watershed at levels that would alter the assumptions of the TMDL or contribute to further impairment.

Q. Calleguas Creek Nitrogen Compounds and Related Effects TMDL. On October 24, 2002, the Regional Board adopted Resolution No. 2002-017, Amendment to the *Basin Plan for the Los Angeles Region* to Include a TMDL for Nitrogen Compounds and Related Effects in Calleguas Creek (*Nitrogen Compounds and Related Effects* TMDL). The State Board approved the Nitrogen Compounds and Related Effects TMDL on March 19, 2003. The Office of Administrative Law approved the TMDL on June 5, 2003 and USEPA approved it on June 20, 2003.

The *Nitrogen Compounds and Related Effects* TMDL includes waste load allocations for ammonia (NH_3), nitrite as nitrogen (NO_2–N), nitrate as nitrogen (NO_3–N), and nitrate plus nitrite as nitrogen (NO_2–N + NO_3–N). The TMDL authorizes interim limitations (expressed as interim waste allocations) for total nitrogen (NO_3-N + NO_2-N). The WLA applied to the publicly owned treatment works (POTW) in the watershed and the LAs are specified for agricultural discharges. Hence, this Order does not include the TMDL limitations for ammonia, nitrate as nitrogen, nitrite as nitrogen, or nitrate plus nitrite as nitrogen for discharges of storm water only from the SSFL to Arroyo Simi and Calleguas Creek. However, based on existing data, SSFL does not appear to contribute nitrogen loading to the watershed at levels that would alter the assumptions of the TMDL or contribute to further impairment.

R. Calleguas Creek Toxicity, Chlorpyrifos, Diazinon TMDL. The Regional Board approved the Basin Plan amendment to incorporate the TMDL for toxicity,

chlorpyrifos, and diazinon in the Calleguas Creek, its tributaries and Mugu Lagoon (Resolution No. R4-2005-009) on July 7, 2005. The TMDL addresses impairment to water quality due to elevated levels of chlorpyrifos, diazinon, other pesticides and/or other toxicants. The amendment includes numeric targets, WLAs, and load allocations for Toxicity Unit Chronic, chlorpyrifos, and diazinon. It also includes a compliance schedule of two years from the effective date of the TMDL to meet the final WLAs and ten years to meet the LAs applied to nonpoint sources.

State Board approved the TMDL on September 22, 2005 (Resolution No. 2005-0067). OAL and EPA approvals were effective on November 27, 2005, and March 14, 2006, respectively. The TMDL became effective on March 24, 2006. A wasteload of 1.0 TUc is allocated to the major point sources (POTWs) and minor port sources discharging to the Calleguas Creek Watershed. Interim and final waste load allocations and were also established for chlorpyrifos and diazinon. The implementation schedule specifies that the interim limitations for chlorpyrifos and diazinon in storm water NPDES permits be in stream limitations. The appropriate waste load allocations will be translated into permit limitations and included in this Order (R4-2007-0055).

S. Calleguas Creek and Mugu Lagoon OC Pesticides, PCBs, and Siltation TMDL. Resolution No. R4-2005-0010, a TMDL for organochlorine (OC) pesticides, polychlorinated biphenyl (PCBs) and siltation in Calleguas Creek, its tributaries, and Mugu Lagoon, was also approved by the Regional Board on July 7, 2005. The TMDL addresses impairment to water quality due to elevated concentrations of OC pesticides and PCBs, which can bioaccumulate in fish tissue and cause toxicity to aquatic life in estuarine and inland waters. Siltation may transport these contaminants to surface waters and impair aquatic life and wildlife habitats. The TMDL establishes water column targets, fish tissue targets, and sediment targets to ensure the protection of beneficial uses. The TMDL establishes a twenty-year compliance plan for reducing OC pesticides, PCBs and siltation loads from point sources and nonpoint sources.

State Board approved the TMDL on September 22, 2005 (Resolution No. 2005-0068). OAL and EPA approvals followed on January 20, 2006, and March 14, 2006, respectively. The TMDL was effective on March 24, 2006. The appropriate targets will apply to discharges from Outfalls 003 through 007, 009, and 010 which enter Arroyo Simi, a tributary of Calleguas Creek.

The TMDL also includes waste load allocations for OC pesticides and PCBs in sediment in Calleguas Creek and its tributaries. The waste load allocations have been translated directly into ambient contaminant concentrations in the sediment of Arroyo Simi. Those ambient contaminant concentrations will be compared directly to sediment concentrations measured in the samples collected to determine compliance with the interim or final waste load allocations stipulated.

The Calleguas Creek OC Pesticides and PCBs TMDL includes a compliance schedule of twenty years. As per the May 10, 2007, memorandum with the subject "Compliance Schedules for Water Quality-Based Effluent limitations in NPDES Permits" from James A. Hanlon, Director of Wastewater Management to Alexis Strauss, Director of the Water Division at USEPA Region 9, this permit includes

both the final and interim WLAs with a compliance schedule providing a maximum of five years of operation utilizing the interim WLAs. The permit includes a provision to reopen the permit to implement the final WLAs if the data collected supports implementation of the final WLAs prior to the renewal of the permit.

The waste load allocations in the water column will be translated into effluent limitations utilizing the steady state model from the SIP. The calculated effluent limitations will be included in the permit as receiving water effluent limitations. Since the discharge is storm water and it is near the top of the watershed, the Discharger may utilize the option of sampling the discharge for the OC pesticides and PCBs or sampling the receiving water. The Discharger may also choose to join the Calleguas Creek Watershed TMDL Monitoring Program (CCWTMP) and monitor at an established compliance sampling location in Arroyo Simi.

T. Calleguas Creek and Mugu Lagoon Metals and Selenium TMDL. Resolution R4-2006-012, the TMDL for metals and selenium for Calleguas Creek, its tributaries and Mugu Lagoon was adopted by the Los Angeles Regional Board on June 8, 2006. The TMDL establishes numeric targets for dissolved copper, nickel, and zinc, and in total recoverable mercury and selenium. It also includes fish tissue targets for mercury, bird egg targets for mercury and selenium and sediment quality guidelines for copper, nickel, and zinc.

State Board approved the TMDL on October 25, 2006 (Resolution No. 2006-0078). OAL and EPA approval the TMDL on February 6, 2007, and March 26, 2007, respectively. The TMDL became effective on March 26, 2007. The TMDL includes final waste load allocations for wet weather total recoverable copper and nickel. A concentration-based waste load allocation applied during both wet and dry weather was also included in the TMDL for mercury.

Discharges from the Boeing SSFL site (Outfalls 003 through 007, 009, and 010) enter Calleguas Creek in Reach 7, which was noted as Arroyo Simi Reaches 1 and 2 in the 1998 303(d) List. Dry weather discharges from this area do not reach Calleguas Creek and Mugu Lagoon. Therefore, no dry weather waste load allocations are established for the constituents in the water column. Selenium waste load allocations have not been developed for this reach as it is not on the 303 (d) list. The final waste load allocation developed for mercury was 0.051 µg/L based on CTR. The mercury waste load allocation was used to develop a daily maximum effluent limit, implemented at Outfalls 003 through 007, 009, and 010.

Final waste load allocations for wet daily maximum concentrations of copper and nickel are stipulated as 31.0 and 958 µg/L, respectively. The daily maximum limit for copper is included in the permit. The TMDL-based daily maximum for nickel (958 µg/L), which was developed to protect aquatic life in the lower Calleguas Creek and Mugu Lagoon, is greater than the Title 22-based MCL limit of 100 µg/L. Since the groundwater basin below the Arroyo Simi has the municipal and domestic supply as an existing beneficial use and Arroyo Simi has groundwater recharge as an intermittent beneficial use, the effluent limitation implemented must be protective of both groundwater recharge and of the downstream aquatic life beneficial uses. Therefore, the 100 µg/L effluent limitation, which is protective of the beneficial uses of Arroyo Simi and the groundwater basin below it, has been implemented for nickel.

V. Regulatory Basis for Effluent Limitations

A. General Basis for Effluent Limitations

B. Effluent limitations established pursuant to Sections 301 (Effluent Limitations), 302 (Water Quality-Related Effluent Limitations), 303 (Water Quality Standards and Implementation Plans), 304 (Information and Guidelines), and 402 (NPDES) of the Federal Clean Water Act and amendments thereto, are applicable to the discharges covered by the tentative order.Water Quality Based Effluent Limitations (WQBELs)

The WQBELs are based on the Basin Plan, other State plans and policies, or USEPA water quality criteria. These requirements, as they are met will protect and maintain existing beneficial uses of the receiving water. Where numeric water quality objectives have not been established in the Basin Plan, 40 CFR section 122.44(d) specifies that WQBELs may be set based on USEPA criteria and supplemented, where necessary by, other relevant information to attain and maintain narrative water quality criteria to fully protect designated beneficial uses.
The previous NPDES permit for SSFL (Order No. 98-051) included monthly averages for chemicals of concern discharged from Outfalls 003 through 008. The discharges from these outfalls consist solely of storm water runoff. These discharges are seasonal and infrequent. Individual NPDES permits that regulate storm water runoff only discharges issued recently by the Regional Board do not contain monthly average limitations. Hence, this Order does not contain monthly average limitations for the storm water runoff only discharges from these outfalls.

C. Reasonable Potential Analysis

Discharges from the engine test stands had not been previously regulated independently. These discharges did not have specific monitoring requirements or effluent limitations. This permit includes effluent limitations for conventional pollutants and requires monitoring for the EPA priority pollutants excluding asbestos from the engine test areas.

In accordance with Section 1.3 of the SIP, the Regional Board will conduct a reasonable potential analysis (RPA) for each priority pollutant with an applicable criterion or objective to determine if a WQBEL is required in the permit. The Regional Board will analyze effluent data to determine if a pollutant in a discharge has a reasonable potential to cause or contribute to an excursion above a state water quality standard. For all parameters that have a reasonable potential, numeric WQBELs are required. The RPA considers water quality objectives outlined in the CTR, NTR, as well as the Basin Plan. To conduct the RPA, the Regional Board must identify the maximum observed effluent concentration (MEC) for each constituent, based on data provided by the Discharger.

Section 1.3 of the SIP provides the procedures for determining reasonable potential to exceed water applicable water quality criteria and objectives. The preliminary steps involve the following:

- Identifying the lowest or most stringent criterion or water quality objective for the pollutant "(C)";

- Adjusting the selected criterion/objective, when appropriate, for hardness, pH, and translators of the receiving water (C_a). There is no hardness data available for Arroyo Simi. For the storm water only discharges to Arroyo Simi, the hardness used was 100 mg/L as $CACO_3$, which is the default value. Consequently, the default value was used to complete the calculation of the final effluent limitations. The acute and chronic dilution factors utilized to complete the calculation are zero since Arroyo Simi, which is a tributary to Calleguas Creek, has intermittent flows and many of the beneficial uses specified for Arroyo Simi are intermittent. A site-specific study would need to be completed to determine if seasonal dilution factors would be appropriate.

  Wastewater discharges from industrial process and storm water from Happy Valley exit the site and flow into Bell Creek, a tributary to the Los Angeles River. The hardness data submitted by the Discharger for the receiving water provided hardness values less than the 100 mg/L as $CACO_3$ default.

  In fact, the hardness data was very similar for the discharge and the receiving water, indicating that the discharge was a primary contributing flow to the receiving water. The default value of 100 mg/L for hardness was used to adjust the selected criteria.

- Collating the appropriate effluent data for the pollutant;

- Determining the observed maximum concentration in the effluent (MEC) from the effluent data; and

- Determining the observed maximum ambient background concentration of the pollutant (B). Ambient data was submitted for Bell Creek upstream of Discharge Serial 001 and 002. This ambient data was included in the calculation of effluent limitations for the wastewater discharges from these two locations. Ambient data was not available for Arroyo Simi and was not included in the analysis of the discharges from Outfalls 003 through 007.

The SIP specifies three triggers to complete a RPA:

1. Trigger 1 – If the MEC is greater than or equal to the CTR water quality criteria or applicable objective (C), a limitation is needed. For certain constituents present in this discharge that were nondetect, the MEC was set at the method detection limit consistent with section 1.3 of the SIP.

2. Trigger 2 – If MEC<C and background water quality (B) > C, a limitation is needed.

3. Trigger 3 – If other related information such as CWA 303(d) listing for a pollutant, discharge type, compliance history, etc. indicates that a WQBEL is required.

The first two triggers were evaluated using the California Permit Writers Training Tool (CAPWTT). While on contract with the State Board, Scientific Applications International Corporation (SAIC) developed this software to determine RPAs and, when reasonable potential exists, calculate the WQBELs, following procedures in SIP. The third trigger is evaluated by the permit writer utilizing all other information available to determine if a water quality-based effluent limitation is required to protect beneficial uses.

The results of the RPA for each analyte evaluated is presented in Attachment 1 for discharges from Outfall 001 and 002 and in Attachment 2 for the storm water only discharges (Outfalls 003 – 007) of Order No. R4-2004-0111. Most of the targeted analytes evaluated have a response of (Best Professional Judgement) BPJ or No Criteria required. The BPJ response requires the permit writer use all other available information to determine if a limit should be stipulated and if necessary to determine the applicable limit. The No Criteria result indicated that CTR does not include criteria to evaluate this analyte.

A numeric limit has not been prescribed for a toxic constituent if it has been determined that it has no reasonable potential to cause or contribute to excursions of water quality standards. However, if the constituent had a limit in the previous permit, and if none of the Antibacksliding exceptions apply, then the limit will be retained if the Regional Board concludes there is reasonable potential. For those pollutants with existing effluent limitations where the CAPWTT did not statistically determine reasonable potential, the Regional Board staff conducted a further analysis under Trigger 3 of the SIP. If reasonable potential was found based on Trigger 3, the basis for that decision is articulated in this fact sheet. A narrative limit to comply with all water quality objectives is provided in *Standard Provisions* for the priority pollutants, which have no available numeric criteria.

Sufficient effluent and ambient data are needed to conduct a complete RPA. If data are not sufficient, the Discharger will be required to gather the appropriate data for the Regional Board to conduct the RPA. Upon review of the data, and if the Regional Board determines that WQBELs are needed to protect the beneficial uses, the permit will be reopened for appropriate modification.

D. Calculating WQBELs

If a reasonable potential exists to exceed applicable water quality criteria or objectives, then a WQBEL must be established in accordance with one of three procedures contained in Section 1.4 of the SIP. These procedures include:

1) If applicable and available, use of the wasteload allocation (WLA) established as part of a total maximum daily load (TMDL).

2) Use of a steady-state model to derive maximum daily effluent limitations (MDELs) and average monthly effluent limitations (AMELs).

3) Where sufficient effluent and receiving water data exist, use of a dynamic model, which has been approved by the Regional Board.

4) WQBELs Calculation Example

Using Copper as an example, the following demonstrates how WQBELs were established for this Order.

Concentration-Based Effluent Limitations

A set of AMEL and MDEL values are calculated separately, one set for the protection of aquatic life and the other for the protection of human health. The AMEL and MDEL limitations for aquatic life and human health are compared, and the most restrictive AMEL and the most restrictive MDEL are selected as the WQBEL.

Calculation of aquatic life AMEL and MDEL:

Step 1: For each constituent requiring an effluent limit, identify the applicable water quality criteria or objective. For each criterion determine the effluent concentration allowance (ECA) using the following steady state equation:

$ECA = C + D(C-B)$ when $C > B$, and
$ECA = C$ when $C <= B$,

Where C = The priority pollutant criterion/objective, adjusted if necessary for hardness, pH and translators. In this Order a hardness value of 100 mg/L (as $CaCO_3$) was used for development of hardness-dependant criteria, and a pH of 8.1 was used for pH-dependant criteria.
D = The dilution credit, and
B = The ambient background concentration

As discussed above, for this Order, dilution was not allowed; therefore:

$ECA = C$

For copper the applicable water quality criteria are (reference Table F-5):

ECA_{acute}= 14.00 µg/L
$ECA_{chronic}$= 9.33 µg/L

Step 2: For each ECA based on aquatic life criterion/objective, determine the long-term average discharge condition (LTA) by multiplying the ECA by a factor (multiplier). The multiplier is a statistically based factor that adjusts the ECA to account for effluent variability. The value of the multiplier varies depending on the coefficient of variation (CV) of the data set and whether it is an acute or chronic criterion/objective. Table 1 of the SIP provides pre-calculated values for the multipliers based on the value of the CV. Equations to develop the multipliers in place of using values in the tables are provided in Section 1.4, Step 3 of the SIP and will not be repeated here.

$LTA_{acute} = ECA_{acute} \times Multiplier_{acute\ 99}$

$LTA_{chronic} = ECA_{chronic} \times Multiplier_{chronic\ 99}$

The CV for the data set must be determined before the multipliers can be selected and will vary depending on the number of samples and the standard deviation of a data set. If the data set is less than 10 samples, or at least 80% of the samples in the data set are reported as non-detect, the CV shall be set equal to 0.6.

For copper, the following data were used to develop the acute and chronic LTA using equations provided in Section 1.4, Step 3 of the SIP (Table 1 of the SIP also provides this data up to three decimals):

CV	ECA $Multiplier_{acute\ 99}$	ECA $Multiplier_{chronic\ 99}$
0.581	0.32	0.53

$LTA_{acute} = 14.00\ \mu g/L \times 0.33 = 4.48\ \mu g/L$

$LTA_{chronic} = 9.33\ \mu g/L \times 0.54 = 4.94\ \mu g/L$

Step 3: Select the most limiting (lowest) of the LTA.

LTA = most limiting of LTA_{acute} or $LTA_{chronic}$

For Copper, the most limiting LTA was the $LTA_{chronic}$

LTA = 4.48 µg/L

Step 4: Calculate the WQBELs by multiplying the LTA by a factor (multiplier). WQBELs are expressed as Average Monthly Effluent Limitations (AMEL) and Maximum Daily Effluent Limitation (MDEL). The multiplier is a statistically based factor that adjusts the LTA for the averaging periods and exceedance frequencies of the criteria/objectives and the effluent limitations. The value of the multiplier varies depending on the probability basis, the coefficient of variation (CV) of the data set, the number of samples (for AMEL) and whether it is a monthly or daily limit. Table 2 of the SIP provides pre-calculated values for the multipliers based on the value of the CV and the number of samples. Equations to develop the multipliers in place of using values in the tables are provided in Section 1.4, Step 5 of the SIP and will not be repeated here.

$AMEL_{aquatic\ life} = LTA \times AMEL_{multiplier\ 95}$

$MDEL_{aquatic\ life} = LTA \times MDEL_{multiplier\ 99}$

AMEL multipliers are based on a 95th percentile occurrence probability, and the MDEL multipliers are based on the 99th percentile occurrence probability. If the number of samples is less than four (4), the default number of samples to be used is four (4).

For copper, the following data were used to develop the AMEL and MDEL for aquatic life using equations provided in Section 1.4, Step 5 of the SIP (Table 2 of the SIP also provides this data up to two decimals):

No. of Samples Per Month	CV	$Multiplier_{MDEL\ 99}$	$Multiplier_{AMEL\ 95}$
4	0.6	3.11	1.55

$AMEL_{aquatic\ life}$ = 4.48 x 1.55 = 6.94 µg/L

$MDEL_{aquatic\ life}$ = 4.48 x 3.11 = 13.9 µg/L

Calculation of human health AMEL and MDEL:

Step 5: For the ECA based on human health, set the AMEL equal to the $ECA_{human\ health}$

However, for copper, the $ECA_{human\ health}$ = Not Available. The CTR does not contain a numeric copper criterion protective of human health; therefore, it was not possible to develop a copper AMEL based on human health criteria.

Step 6: Calculate the MDEL for human health by multiplying the AMEL by the ratio of the $Multiplier_{MDEL}$ to the $Multiplier_{AMEL}$. Table 2 of the SIP provides pre-calculated ratios to be used in this calculation based on the CV and the number of samples.

A copper $MDEL_{human\ health}$ could not be calculated because a copper $AMEL_{human\ health}$ was not available. There are no criteria protective of human health for copper; therefore, none of the limitations for copper are based on human health criteria.

Step 7: Select the lower of the AMEL and MDEL based on aquatic life and human health as the WQBEL for the Order.

For copper:

$AMEL_{aquatic\ life}$	$MDEL_{aquatic\ life}$	$AMEL_{human\ health}$	$MDEL_{human\ health}$
7.0 µg/L	14 µg/L	Not Applicable	Not Applicable

The lowest (most restrictive) effluent limitations are based on aquatic toxicity and were incorporated into this Order. For copper, there are no human health criteria; therefore, the AMEL and MDEL based on aquatic life criteria are considered for WQBELs.

E. Impaired Water Bodies in 303 (d) List

Section 303(d) of the CWA requires states to identify specific water bodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations on point sources. For all 303(d) listed water bodies and pollutants, the Regional Board plans to develop and adopt TMDLs that will specify WLAs for point sources and load allocations (LAs) for non-point sources,

as appropriate.

The USEPA has approved the State's 303(d) list of impaired water bodies. Certain receiving waters in the Los Angeles and Ventura County watersheds do not fully support beneficial uses and therefore have been classified as impaired on the 2002 303(d) list and have been scheduled for TMDL development.

The Los Angeles River flows for 55 miles from the Santa Monica Mountains at the western end of the San Fernando Valley to the Pacific Ocean. The Los Angeles River drains an area of about 825 square miles. Approximately 324 square miles of the watershed are covered by forest or open space land. The rest of the watershed is highly developed. The river flows through industrial, residential, and commercial areas, including major refineries and petroleum products storage facilities, major freeways, rail lines, and rail yards serving the Ports of Los Angeles and Long Beach.

The majority of the Los Angeles River watershed is considered impaired due to a variety of point and nonpoint sources. The 2002 303(d) list includes total aluminum, dissolved cadmium, dissolved copper, dissolved zinc, high coliform count, pH, ammonia, nutrients (algae), odors, lead, coliform, trash, scum, oil, dichloroethylene, tetrachloroethylene, and trichloroethylene. High coliform count is a pollutant stressor for Bell Creek. The pollutant stressors listed for the Los Angeles River estuary include chlordane, DDT, lead, PCBs and zinc in sediment. The beneficial uses potentially threatened or impaired by degraded water quality are aquatic life, recreation, groundwater recharge, and municipal water supply.

Calleguas Creek Watershed and its major tributaries, Revlon Slough, Conejo Creek, Arroyo Conejo, Arroyo Santa Rosa, and Arroyo Simi drain an area of 343 square miles in southern Ventura and a small portion of western Los Angeles County. The northern boundary of the watershed is formed by the Santa Susana Mountains, South Mountain, and Oak Ridge; the southern boundary is formed by the Simi Hills and Santa Monica Mountains.

Urban developments within the watershed are generally restricted to the city limits of Simi Valley, Moorpark, Thousand Oaks, and Camarillo. Agricultural activities, primarily cultivation of orchards and row crops, are spread out along valleys and on the Oxnard Plain.

The Watershed Management Initiative characterizes the Calleguas Creek Watershed as a very impaired watershed. Calleguas Creek Reach 7 (the Arroyo Simi) is on the 2002 303 (d) list for ammonia, chloride, boron, sulfates, total dissolved solids, fecal coliform, organophosphorus pesticides, and sedimentation/siltation. The 2006 303(d) list includes the constituents listed on the 2002 303 (d) list except ammonia, organoposphorous pesticides and sedimentation/siltation. The beneficial uses potentially threatened or impaired by degraded water quality are wildlife habitat, and rare, threatened or endangered species habitat. The intermittent beneficial uses potentially impacted include industrial process supply, groundwater recharge, freshwater replenishment, contact and non-contact water recreation, and warm freshwater habitat.

F. Whole Effluent Toxicity

Whole Effluent Toxicity (WET) protects the receiving water quality from the aggregate toxic effect of a mixture of pollutants in the effluent. WET tests measure the degree of response of exposed aquatic test organisms to an effluent. The WET approach allows for protection of the narrative "no toxics in toxic amounts" criterion while implementing numeric criteria for toxicity. There are two types of WET tests: acute and chronic. An acute toxicity test is conducted over a short time period and measures mortality. A chronic toxicity test is conducted over a longer period of time and measures mortality, reproduction, and growth.

The Basin Plan specifies a narrative objective for toxicity, requiring that all waters be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental response on aquatic organisms. Detrimental response includes but is not limited to decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alterations in population, community ecology, or receiving water biota. The existing permit does not contain toxicity limitations or monitoring requirements.

In accordance with the Basin Plan, acute toxicity limitations dictate that the average survival in undiluted effluent for any three consecutive 96-hour static or continuous flow bioassay tests shall be at least 90%, with no single test having less than 70% survival. Consistent with Basin Plan requirements, this Order includes acute toxicity limitations.

In addition to the Basin Plan requirements, Section 4 of the SIP states that a chronic toxicity effluent limitation is required in permits for all discharges that will cause, have the reasonable potential to cause, or contribute to chronic toxicity in receiving waters.

The Discharger will be required to conduct chronic toxicity testing. The Order includes a chronic testing trigger hereby defined as an exceedance of 1.0 toxic units chronic (TUc) in a critical life stage test for 100% effluent. (The monthly median for chronic toxicity of 100% effluent shall not exceed 1.0 TUc in a critical life stage test.) If the chronic toxicity of the effluent exceeds 1.0 TUc, the Discharger will be required to immediately implement accelerated chronic toxicity testing according to Monitoring and Reporting Program, Item IV.D.1. If the results of two of the six accelerated tests exceed 1.0 TUc, the Discharger shall initiate a toxicity identification evaluation (TIE).

G. Specific Rationale for Each Numerical Effluent Limitation

Section 402(o) of the Clean Water Act and 40 CFR 122.44(l) require that effluent limitations standards or conditions in re-issued permits are at least as stringent as in the existing permit unless an antibacksliding exception applies. The Regional Board has determined that reasonable potential exists for all pollutants that are regulated under the current permit; therefore effluent limitations have been established for these pollutants. Furthermore, effluent limitations for several contaminants have been included based on BPJ with the CTR WQBELs or with effluent limitations from the current Order.

In compliance with 40 CFR 122.45(f), mass-based limitations have also been established in the proposed Order for conventional and priority pollutants. The mass for both the maximum and the monthly or 30-day average limitations and when appropriate the 7-day average effluent limitations were calculated using the flow for the associated operation, which was provided by the Discharger.

When calculating the mass for discharges, the maximum permitted flow rate was used to calculate the daily maximum, the monthly average, or 7-day average mass. When calculating the appropriate mass for the discharge event or events evaluated the actual flow rate should be substituted in the following equation. The daily maximum flow will be used to calculate the daily maximum, the monthly average, 30-day average or 7-day average flows will be used to calculate the respective mass discharge limit.

Mass (lbs/day) = flow rate (MGD) X 8.34 X effluent limitation (mg/L):
where: mass = mass limit for a pollutant in lbs/day
effluent limitation = concentration limit for a pollutant, mg/L
flow rate = discharge flow rate in MGD

Order R4-2004-0111

Outfalls 001 and 002. RPAs were performed using CAPWTT for each of 126 priority pollutants for which effluent data were available. The input data for the RPAs were provided in the Self-Monitoring Reports submitted by the Discharger. One RPA was performed for discharges from Outfalls 001 and 002, which are composed of treated wastewater, water from the groundwater treatment systems, excess reclaimed water, water from the engine test stands, and storm water. Four analytes had reasonable potential to exceed WQBELs: copper, lead, mercury, and TCDD. Three of these analytes (copper, lead, and mercury) had effluent limitations in the previous order (Order No. 98-051).

The Discharger also submitted data for the receiving water associated with discharges from Outfalls 001 and 002. This data was collected using elevated detection limits and hence several other constituents had reasonable potential. The constituents are 2,4,6-trichlorophenol, 2,4-dinitrotoluene, alpha-BHC, bis(2-ethylhexyl)phthalate, N-nitrosodimethlyamine and pentachlorophenol. Effluent limitations for these constituents have also been included in this Order.

Since perchlorate has been detected above the Department of Health Services action level in storm water runoff from the facility and it has been detected in the influent to some of the groundwater treatment systems, BPJ has been used to establish reasonable potential for it to be present in discharges from the site via Outfalls 001 and 002. Consequently an effluent limit for perchlorate has been included in this Order for these discharges. Since perchlorate is typically not a naturally occurring pollutant and its presence in the receiving waters is the result of operations at the facility, the effluent limitation was developed based on anti-degradation grounds (State Board Res. No. 68-16 and 40 CFR § 131.12). The effluent limitation was therefore set at 6 µg/L, which would prevent the degradation of receiving waters and maintain and protect receiving water quality.

Several volatile organic compounds (VOCs) had effluent limitations in Order No. 98-051 for discharges from Outfalls 001 and 002. The number of samples evaluated for each contaminant ranged from 19 to 60, and none of the contaminants were detected. The CTR based effluent limitations for all of the VOCs except 1,1-dichloroethylene, were less stringent than the limitations in Order No. 98-051. Since none of the contaminants were detected during numerous sampling events and the limitations in the tentative Order would be the same as those from the previous Order, the limitations for these analytes were not included. The only VOC that has limitations in the tentative Order is 1,1-dichloroethylene. The limit is included since the CTR based limit for this analyte is more stringent than the limit included in the previous Order.

As set forth above, Section 1.3 of the State Board's State Implementation Plan (SIP) establishes a stepwise procedure for determining which toxic pollutants require water quality-based effluent limitations in conformance with 40 C.F.R. § 122.44(d). This stepwise procedure for toxic pollutants is called a reasonable potential analysis. The SIP's reasonable potential analysis applies to water quality standards for priority pollutants, whether promulgated by USEPA or established as water quality objectives by the Regional Board. Steps 1 through 6 establish an analytical procedure for requiring water quality-based limitations based solely on discharge and ambient receiving water data. Except as noted in the preceding paragraph, reasonable potential for toxic pollutants regulated by this Order was determined using the analytical procedure in Steps 1 through 6 of SIP section 1.3 as explained above.

Step 7 of SIP Section 1.3 recognizes that in certain instances a rote, mathematical analysis of the data will not be sufficient to protect beneficial uses. Step 7 therefore reserves for the Regional Board the obligation to "review other available information to determine if a water quality-based effluent limitation is required, notwithstanding the above analysis in *Steps 1* through *6*, to protect beneficial uses." Among the factors the State Board identifies as relevant to the Step 7 analysis are: the facility type, discharge type, and potential toxic impact of the discharge. With respect to the Facility, the Regional Board finds sufficient, unusual circumstances to require a water quality-based effluent limitation for trichloroethylene (TCE). Data and testimony indicate that approximately 530,000 gallons of TCE were released to the soil and groundwater at the Facility. The tremendous volume of TCE released at the site warrants significant scrutiny. While recent monitoring data do not show TCE in surface water discharges, scouring from large storm events may release soils with adsorbed TCE. The large volumes of TCE in scoured soils may become chemically available in the surface water runoff and cause or contribute to an exceedance of the water quality standard. In addition, the existing monitoring data has been collected far downstream from on-site sources. The data may not reliably indicate the presence of TCE in waters of the United States because the turbid conditions may have volatilized the TCE before it reached existing monitoring points. Further, contamination is spotty and not completely characterized; pathways are not always predictable and are not fully characterized; and the site is in a hilly environment with uncertain pathways and seeps which could possibly lead to surfacing of water with contamination that cannot be predicted. Finally, TCE is a probable carcinogen that can cause skin rashes on contact, and when ingested has been associated with liver and kidney damage,

impaired immune system function, and in large volumes unconsciousness, impaired heart function, or death. Considering the toxic nature of TCE and that past practices at the site released extraordinary volumes of TCE into the environment that can continue to leach into surface water through the scouring from storm events, and further considering that the existing monitoring data may not be representative of direct discharges to waters of the United States since the data were collected downstream of the initial discharge, the Regional Board has determined that a water quality-based effluent limitation for TCE is necessary to protect beneficial uses.

Outfalls 003 through 007. Discharges from Outfall 003 through 007 are storm water runoff only. Daily maximum and monthly average limitations for storm water were included in Order No. 98-051. This Order does not include monthly average limitations for priority pollutants in storm water only discharges since storm events are infrequent and often
occur less than once per month during the rainy season. This change in the limitations is consistent with permits adopted by the Regional Board for storm water discharges only.

The storm water only discharges from Discharge Outfalls 003 through 007 were also evaluated using CAPWTT (Attachment 2 of Order No. R4-2004-0111). The analytes with statistical reasonable potential are cadmium, copper, cyanide, mercury, and TCDD (Attachment 2 page 1). Cyanide was detected only once during the period evaluated at a concentration of 5.8 micrograms/liter. That detection triggered the reasonable potential since it exceeds that calculated average monthly effluent limit (AMEL). However, the discharges evaluated are storm water only discharges, which do not have monthly average limitations. When the maximum effluent concentration (MEC) of 5.8 µg/L is compared to the maximum daily effluent limit (MDEL) the MEC is less than the MDEL. Consequently, this permit does not include an effluent limit for cyanide in the storm water only discharges. CTR-WQBELs for cadmium copper, mercury and TCDD have been included in this Order. The previous order included effluent limitations for all of these analytes except TCDD. The effluent limitations for the analytes with a positive RPA are the most stringent of the limit included in Order 98-051, and the applicable CTR criteria which include the freshwater aquatic life criteria, and the human health criteria for consumption of organisms only. The previous permit included limitations for these analytes from Title 22, which are more stringent than the CTR limitations. The compliance history reveals that the effluent limit for antimony (6 µg/L) was exceeded at Outfalls 005 and 007 in 1999 and the limit for thallium (2 µg/L) was exceeded at Outfall 005 on March 8, 2000. Therefore, limitations for antimony and thallium were established using best professional judgement.

The monthly average effluent limit for mercury included in Order No. 98-051 (0.012 µg/L) was based on freshwater continuous criteria from 40 CFR 131.36. This limit is based on a fish consumption advisory, which appeared in the July 1, 1998 edition but was subsequently withdrawn. CTR included criteria for mercury, which was used to develop the WQBEL for mercury that is included in Order R4-2004-0111.

The CTR-WQBELs for cadmium in the tentative Order is greater than the limit stipulated in Order 98-051 (previous order). The daily maximum concentrations for cadmium from the previous order were taken directly from NTR and were expressed

as dissolved criteria. The daily maximum limitations for all metals included in this order were calculated based on criteria that appears in CTR when they were the most protective criteria available. The dissolved criteria were adjusted using conversion factors to total recoverable. Since the effluent limit for cadmium in the Order R4-2004-0111 is total cadmium it is slightly higher than the limit included in the Order 98-051.

The criteria stipulated for TDS, sulfate, chloride, and nitrogen also changed for storm water discharges to the Arroyo Simi, a tributary of Calleguas Creek. The criteria listed previously were the stipulated criteria for the Los Angeles River Watershed. The criteria stipulated for Calleguas Creek above Potrero Road are 850, 250, 150, 1.0, and 10 mg/L for TDS, sulfate, chloride, boron and nitrogen respectively.

Outfall 008. The area commonly referred to as Happy Valley receives storm water runoff from the former solid propellant testing area. Operations at the former solid propellant testing area ended in 1994. A major component of the propellant was perchlorate. Since the propellant has been used in the area and it has been detected in the storm water runoff at concentrations exceeding the Department of Health Services action level of 4 µg/L (which was changed to 6 µg/L on March 11, 2004), an effluent limit for perchlorate has been included in this Order. The effluent limitation for perchlorate is established based on antidegradation as explained for Outfalls 001 and 002. A requirement for sampling of the storm water runoff all other constituents tested for at Outfalls 003 through 007, has also been included in this Order. The new storm water monitoring location is Discharge Outfall 008. Storm water from Happy Valley flows to Dayton Canyon Creek. Dayton Canyon Creek merges with flows from Chatsworth Creek, which flows south to Bell Creek southwest of the intersection of Shoup Avenue and Sherman Way. Bell Creek subsequently flows east to the Los Angeles River.

This area has since undergone an interim measure cleanup, with final excavation occurring in September 2004, under the direction of DTSC.

Outfalls 009. The WS-13 Drainage area begins near the entrance to the property and traverses several potential areas of concern. The WS-13 drainage area collects storm water runoff from the Area 1 and Area 2 Landfills, and the former LOX plant located on NASA owned property. In addition, WS-13 picks up storm water run on from Sage Ranch where agricultural operations took place and a gun shooting range is located. Prior to Order R4-2004-0111, this drainage had only been sampled once. Additional data would provide information regarding the transport of contaminants in these areas offsite by storm water runoff. The WS-13 Drainage area will become Discharge Outfall 009; this outfall drains to Arroyo Simi.

Outfall 010. Building 203 was formally used as an instrumentation laboratory where various types of instrumentation were repaired and calibrated. The instrumentation included but was not limited to, thermometers and manometers that contained mercury. Currently the building houses operations related to laser research. Operations include polishing fibers, hand wipe solvent and chemical cleaning, assembly and test of various components in both open warehouse and clean room environments. All wastes are currently containerized and transported off site for disposal. An interim measures cleanup was completed in this area during the summer of 2004. With DTSC oversight, soil containing mercury and trichloroethylene was

removed, hauled offsite and disposed of at a permitted disposal facility.

Outfall 011. The Perimeter Pond collects wastewater generated from Area 1. The discharges from groundwater treatment systems located in Area 1, discharges from Sewage Treatment Plant 1 and storm water runoff from the vicinity is discharged initially to R-1 Pond which flows to the Perimeter Pond. Discharges from the Perimeter Pond exit the site via Outfall 001. The Perimeter Pond is the final step in the storage of water. Consequently, this Order includes effluent limitations and requirements for monitoring of the effluent from the pond for the priority pollutants and for other targeted chemicals of concern at the site.

Outfalls 012 – 014. The various test stands are used to test fire rocket engines built onsite. The fire suppression water used during testing may contain residual fuels and solvents. This wastewater is directed via lined and unlined channels to the reclamation ponds, which are used to store wastewater collected from the various onsite operations along with any storm water runoff for reuse onsite.

The Regional Board will have oversight of the discharges from the engine test stands. R4-2004-0111 included requirements for monitoring of the discharges. The data collected will be used to evaluate reasonable potential of the discharge to exceed applicable requirements and if warranted; effluent limitations will be implemented for the discharges.

Outfalls 015 – 017. In July 2004 the two operational plants (STP-1 and STP-3) were activated sludge sewage treatment plants that provided secondary and tertiary treatment for the domestic sewage from the facility. The disinfected sewage effluent was subsequently directed to the reclaimed water system reservoir. The two plants which are currently being used as collection reservoirs only, previously had effluent limitations for $BOD_5 20°C$, coliform, and turbidity on discharges from the facilities. Sewage sludge was hauled offsite to the one of the facilities operated by Los Angeles County Sanitation Districts. The monitoring program for the sewage treatment plants included requirements for the previously mentioned constituents as well as pH, oil and grease and suspended solids. Order R4-2004-0111 included requirements to monitor for priority pollutants except asbestos, perchlorate, N-nitrosodimethylamine, 1,4-dioxane, and 1,2,3-trichloropropane to provide the data required to evaluate reasonable potential. If reasonable potential exists, effluent limitations will be implemented.

Outfall 018. The R-2A and R-2B Ponds are used to collect wastewater from Areas II and III. R-2A Ponds collect wastewater from the Delta Groundwater Treatment System and storm water runoff from the location of the former Delta Test Stand. The R-2B Ponds receive overflow from the Silvernale Pond which includes discharges from the Bravo, Alpha and RD-9 Groundwater Treatment Systems and storm water runoff from the Alpha and Bravo Engine Test Stands. The R-2B Pond also receives wastewater discharges and storm water runoff from the STL-IV Test Stand area. The R-2 Spillway is an overflow area used to allow the wastewater from the two ponds to flow via a drainageway to Outfall 002. Wastewater released from the R-2 Spillway travels approximately 4,500 feet prior to reaching Outfall 002. Hence, this permit includes a monitoring requirement for discharges from the R-2 Spillway.

Data collected from August 20, 2004 (the effective date of Order R4-2004-0111) through May 5, 2005 was used to evaluate reasonable potential at the compliance points enumerated in that Order. This analysis has been completed to supplement the initial results presented in Order R4-2004-0111.

R4-2006-0008

Outfalls 001 002, 011, and 018 discharge wastewater and storm water runoff from SSFL to Bell Creek at the south. Outfalls 011, the Perimeter Pond, and 018, the R-2 Pond Spillway, are located directly upstream of Outfalls 001 and 002 respectively. Discharges from Outfalls 011 and 018 receive no additional treatment prior to exiting Outfalls 001 and 002. However, storm water runoff traversing other RCRA areas of concern may pick up other contaminants and subsequently enter the streambed between the upstream outfalls (Outfalls 011 and 018) and the corresponding downstream outfalls (Outfalls 001 and 002). Since there was no additional treatment, the discharges from these outfalls were evaluated together.

The statistical analysis yielded reasonable potential for copper, lead, mercury, and TCDD. The data, site history, and other information available were incorporated into the BPJ analysis. This analysis supported the retention of effluent limitations established at Outfalls 001 and 002 in Order No. R4-2004-0111 and it supported the inclusion of those effluent limitations for discharges from Outfalls 011 and 018.

Outfalls 008, 009 and 010 are storm water only outfalls. Data collected at these locations since the adoption of Order No. R4-2004-0111 indicated that the discharges from these locations are very similar to those from the other storm water only discharge locations. The statistical RPA of the data collected from all of the storm water locations resulted in Tier 1 RPA for copper, lead, mercury and TCDD. Since the discharges from Outfalls 008, 009 and 010 are very similar to those from Outfalls 003 through 007, BPJ was used to establish effluent limitations for other priority pollutants and other chemicals of concern (i.e. perchlorate) at all of the storm water only outfalls.

Outfalls 012-014 (Rocket Engine Test Stands) Data collected at Outfall 012 resulted in Tier 1 reasonable potential using the method specified in the SIP for copper, lead, mercury, TCDD. Additional constituents including settleable solids, total suspended solids, 1,4-dioxane, total petroleum hydrocarbons, naphthalene, oil and grease, tertiary-butyl alcohol, and ethlyene dibromide demonstrated RP utilizing the TSD method. RP was established for total dissolved solids and perchlorate based on BPJ. These constituents as well as other applicable Basin Plan constituents have been included in this addendum.

During the development and adoption of Order R4-2004-0111, Regional Board staff was informed that Boeing was not utilizing the three package type sewage treatment plants located onsite (STP1, STP2, STP-3), which are NPDES Outfalls 15-17. A rain event on January 11, 2005, resulted in the discharge of partially treated wastewater from Outfalls 015 and 017. The evaluation of the data collected resulted in Tier 1 reasonable potential for cadmium, chromium III, copper, mercury, nickel, TCDD. Other constituents of concern that demonstrate reasonable potential include MBAS,

TSS, BOD, perchlorate, total coliform oil and grease, total residual chlorine, and nitrate as nitrogen. The BPJ analysis resulted in reasonable potential for total dissolved solids, chloride, sulfate, fluoride, nitrate + nitrite as nitrogen, and barium. Effluent limitations for these constituents were included in Order R4-2006-0008.

R4-2006-0036

Discharges from Outfalls 001, 002, 011 and 018 flow to Bell Creek a tributary of the LA River. The TMDL for metals in the Los Angeles River assigned WLAs to all point source discharges to LA River and all upstream reaches and tributaries to (including Bell Creek and tributaries to Bell Creek). Effluent limitations for cadmium, copper, lead, zinc, and selenium at the aforementioned outfalls were based on WLAs established by the TMDL or existing effluent limitations, whichever were more protective. The LA River Nutrient TMDL requires WLAs for ammonia-N, nitrate-N, and nitrite-N, which are included for these outfalls.

Outfalls 003 through 010 are storm water only outfalls. Outfall 008 is the only storm water only compliance point that discharges to Dayton Canyon Creek which flows to Bell Creek, a tributary of the Los Angeles River. The storm water only discharges do not have statistical reasonable potential for zinc. However, discharges from Outfall 008 flow to the LA River, which has a TMDL that provides a WLA for zinc. That WLA will also be incorporated as an effluent limitation at Outfall 008 only. The LA River Nutrient TMDL requires WLAs for ammonia-N, nitrate-N, and nitrite-N, which are also included for this outfall.

Discharges from Outfalls 012 through 014 (rocket engine test stands) exit the site via tributaries to Bell Creek. The metals that have TMDL WLAs that do not have reasonable potential at these outfalls are cadmium, selenium and zinc. Effluent limitations for these constituents are included based on the TMDL. The Los Angeles River Nutrient TMDL developed WLAs for ammonia-N, nitrate-N, and nitrite-N. Daily maximum effluent limitations for these constituent were also applicable and included for discharges from these locations. The LA River Nutrient TMDL requires WLAs for ammonia-N, nitrate-N, and nitrite-N.

Discharges from Outfalls 015 through 017 exited the site via tributaries to Bell Creek. The Metals TMDL resulted in new WLAs for lead and selenium and a wet weather discharge WLA for cadmium. The LA River Nutrient TMDL requires WLAs for ammonia-N, nitrate-N, and nitrite-N. TMDL based effluent limitations were included in the order for the noted metals and nutrients.

R4-2007-0055

On February 21, 2007, the discharger submitted a new ROWD that requested that outfalls 012, 013, and 014 be removed from the permit. Since discharges from the rocket engine test stands have terminated, wastewater will no longer be discharged. However, years of using the rocket engine test stands have resulted in contamination in the immediate vicinity of the test stands. RCRA investigations have resulted in the delineation of areas surrounding the test stands as RCRA Facility Investigation (RFI) sites. Chemicals of concern identified at these sites include TPH-gasoline, TPH-diesel, TPH-kerosene, oil and grease, trichloroethene and 1,2-dichloroethene. Since

these contaminants are documented as present in these locations the discharger will be required to monitor during storm events for chemicals of concern. The effluent limitations included in Orders R4-2006-0008 and R4-2006-0036 for the rocket engine test stands will be included as "benchmarks".

A "benchmark" is a water quality based effluent limit or a performance based limit that is used to evaluate the performance of BMPs with regard to the removal of contaminants present in the discharge. In this permit, the benchmarks are established based on water quality based effluent limitations. Exceedance of a benchmark two times consecutively at the same location triggers an evaluation of the BMPs implemented at the site. The evaluation may determine that the BMPs require augmentation, upgrading, or replacement. If so, the Discharger must develop a plan to implement the required upgrades and report to the Regional Board staff within 60 days of the second reported exceedance. The Discharger will continue monitoring as directed in the Monitoring and Reporting Program and the Basin Management Practices Compliance Plan.

Topanga Fire: The Topanga Fire occurred on September 28, 2005. The fire resulted in significant alterations to the site. Over 70 percent of the SSFL burned with significant areas denuded of vegetation, making much of the steep terrain highly erodible. The exposure of the surface soils with no vegetative cover to runoff has increased the potential for the transport of those surface soils and associated contaminants offsite as a result of the fire. All of the BMPs in place onsite were destroyed.

After the fire Boeing immediately began efforts to replace the BMPs that were destroyed. Many of the drainage areas were vacuumed to remove accumulated ash. The Discharger hydromulched in excess of 800 acres onsite and installed erosion control devices throughout much of the SSFL site prior to the January 19, 2006 Board Meeting. BMPs implemented prior to the fire were typical of those routinely used at construction sites to retard the transport of sediment (silt fences, plastic sheeting, etc). In most cases, the BMPs implemented after the fire were designed to slow flows (i.e. using underdrain systems) and to treat specific contaminant groups (i.e. metals) using bags filled with carbon or vermiculite.

On May 24, 2007, Boeing submitted to the Regional Board the *Phase 2 Post-Fire Vegetation Recovery Assessment Report* prepared for Geosyntech Consultants by Western Botanical Services, Inc. The report assessed the status of and time to recovery of chaparral and scrub at the project site subsequent to the Topanga Fire which began on September 28, 2005. The executive summary of the report asserts that chaparral and scrub represent the dominant vegetation types at SSFL and that these plant communities represent an important natural vegetation-based means of erosion control at the site. It further states that the "perennial plant cover differed by significantly more than 30 percent between burned and unburned transects, total vegetative cover differed by significantly greater than 20 percent cover and ground cover differed by significantly more than 30 percent cover." The executive summary also states that the burned chaparral and scrub vegetation will likely recover to previous conditions within five to ten years.

The report also includes a section titled *Chaparral Recovery after Fire.* The section includes summaries of other studies completed on chaparral. Several studies (Guo 2001, Grace & Keeley 2006, Keeley & Keeley 1981, Horton & Kraebel 1955, Robi chaud et al 2000) concluded that the total vegetative cover is generally high in the first two years following a fire: reported values are from 11 to 85 percent. The report estimates that between March 26 and April 12, 2007, the mean total vegetative cover within the burned areas on the SSFL site is 46.6 percent.

Soil infiltration capacity is sometimes reduced after a fire. This reduction in soil infiltration capacity is due to an increase in soil water repellency (hydrophobicity) which is caused by waxy residues that are deposited on the soils during the burning of vegetation. On July 17, 2007, Boeing submitted the "Post Fire Soil Hydrophobicity and Recovery of Infiltration Capacity Report". The report documented an investigation of the pre-fire and post fire hydrophobicity conditions in four onsite target soil groups. The analysis was completed in April 2007. The conclusion suggests no statistical difference in the hydrophobicity of the soils between the burned and unburned tested areas onsite other than a portion of watershed 002 (west of Outfall 018). (Based on a confidence level of α=0.05.) The report included the statement that case studies indicate that the recovery time ranged from one to three years. The study at SSFL was completed nineteen months after the fire which began on September 28, 2005.

Regional Board's Wet Weather Task Force: During the Regional Board hearing on the 2005-07 Triennial Review of the Basin Plan, many stakeholders raised the issue of compliance with water quality standards and TMDLs during wet weather as a significant challenge and suggested that the formation of a Wet Weather Task Force to discuss and identify potential solutions to the challenges involved in complying with water quality standards during wet weather would be helpful. The Regional Board requested that staff convene a task force to identify project ideas that would address these wet weather concerns. The task force identified as a top priority a project to evaluate alternative design storm criteria. A design storm is a specific size storm event used to plan for and design storm water controls. Specifically, a design storm would assist in determining the scale and treatment capacity of controls such as BMPs. The Regional design storm issue arose again as a high priority for stakeholders as well as the Board at the hearing on the Los Angeles River Metals TMDL. During the TMDL hearing, the Executive Officer, Jonathan Bishop, committed Regional Board resources to fund an initial 2-year contract with Southern California Coastal Water Research Project (SCCWRP) to begin an evaluation of potential design storms that could be used by responsible agencies when implementing TMDLs.

Over the last two years, Regional Board staff has been working with SCCWRP, GeoSyntec, and a cross-section of stakeholders in the region known as the Design Storm Project Steering Committee on this project to evaluate potential design storms in terms of capturing storm water runoff, achieving water quality standards and implementability. A draft report is scheduled for circulation in early September 2007, which will summarize the results of the first two years of the project; discuss the complexities of establishing a regional design storm; and set forth recommendations for additional technical studies, sensitivity analysis and modeling.

Regional Board staff recognizes that while there are an infinite number of site specific considerations and permutations that could be considered in evaluating potential design storms (e.g. different land uses, different pollutants, different inter-event times, different levels of effluent quality, etc.), it was necessary to make many assumptions and generalizations during this initial evaluation of regional design storms.

Therefore, Regional Board staff anticipates that further work will be needed before proposing a regional design storm policy or any site-specific design storm in order to further explore these assumptions and generalizations; evaluate the efficacy of the design storm for different pollutants and land uses; refine the data used in modeling the water quality outcomes of potential design storms and consider policy with regard to incorporating design storms into permits. It is therefore premature to establish a regional design storm or site-specific design storm at this time prior to this additional technical work and prior to a full consideration of the policy considerations of adopting a regional design storm policy.

Boeing's BMP Capacity Evaluations: On February 23, 2007, Boeing submitted to the Regional Board a memo entitled Outfall BMP Capacity Evaluation – 1 year storm 1 hour time of concentration. The memo evaluated the capacity of onsite structural best management practices. The memo also documented discussions with Regional Board staff which introduced the possibility of the use of the design storm size used for the trash TMDL in the Los Angeles River. The site specific storm proposed by Boeing utilized the same approach as was utilized in the Los Angeles River Trash TMDL, with some modifications. Boeing's concluded that a storm that generated a flow of 2.3 inches depth could be considered the "site specific design storm" and it was used to design the structural BMPs.

On April 3, 2007, Boeing submitted to the Regional Board a letter entitled Boeing SSFL Best Management Practice Rainfall Capacity Submittal. The letter included a summary of the site specific storm analysis and an evaluation of the BMPs in place. The analysis of the BMPs in place concluded that BMPs at Outfalls 003 and 004 required upgrades to capture and treat the 2.3 inches of rainfall. All other storm water only outfalls had best management practices capable of treating the storm depth of 2.3 inches, except Outfalls 008 and 009. The Discharger proposed the implementation of natural BMPs to treat the 2.3 inches of rainfall at Outfalls 008 and 009. The Discharger indicated that the location, terrain, and size of these outfalls make the implementation of structural BMPs to treat that volume of water (2.3 inches) much more difficult at these locations. The modeling and the structural BMP upgrades required to treat the site specific storm have been implemented at Outfalls 003 through 007.

The assumptions and generalizations utilized to develop the site specific storm have not been enumerated by the Discharger. The Regional Board has not developed a regional design storm policy or a policy for the consideration and evaluation of site specific storms developed for individual discharges. Therefore, this permit does not implement the 2.3 inches as the upper bound of the runoff that the discharger must treat for compliance with the final effluent limitations. When the Regional Board Design Storm Project, and associated policy considerations, are further developed

along with an evaluation of acceptable assumptions and generalizations, the storm size developed by the Discharger may be considered by the Regional Board.

Reasonable Potential Analysis: A reasonable potential analysis was completed for data collected through May 22, 2006. The analysis did not result in the inclusion of any new constituents with effluent limitations in this Order.

Outfalls 015 through 017 will be deleted. The discharger currently trucks the wastewater offsite for disposal at one of the County Sanitation Districts of Los Angeles facilities and there are no plans to initiate discharges from the treatment plants in the future. Therefore, the updated ROWD included a request that Outfalls 015 through 017 be removed from the permit.

To prevent further degradation of the water quality of the Los Angeles River and Calleguas Creek and to protect their beneficial uses, mixing zones and dilution credits are not allowed in this Order. This determination is based on:

- Many of the beneficial uses stipulated are intermittent for Dayton Canyon Creek, Bell Creek and the Arroyo Simi. The discharges from SSFL in many cases provide a significant portion of the headwaters for these waterbodies. Since there is little assimilative capacity of the receiving water, a dilution factor is not appropriate and the final WQBEL should be a numeric objective applied end-of-pipe.

- The discharge may contain the 303(d) listed pollutants that are bioaccumulative such as metals. These pollutants, when exceeding water quality criteria within the mixing zone, can potentially result in tissue contamination of an organism directly or indirectly through contamination of bed sediments with subsequent incorporation into the food chain. The SIP, section 1.4.2.2.B. states that the "Regional Board shall deny or significantly limit a mixing zone and dilution credit as necessary to protect beneficial uses..." It continues that "such situations may exist based upon the quality of the discharge... or the overall discharge environment (including ... potential for bioaccumulation)."

For some pollutants, including aldrin, alpha-BHC, chlordane, DDT, dieldrin, heptachlor, heptachlor epoxide, several PAHs, PCBs, TCDD equivalents, and toxaphene the applicable water quality objectives are below the levels that current analytical techniques can measure. Reasonable potential analyses have been completed on each of these constituents and two of them had reasonable potential: alpha-BHC and TCDD equivalents. The MEC detected for TCDD exceeded the CTR criterion and the detection limits for alpha-BHC in the receiving water and the effluent exceeded the criterion.

VI. MODIFICATIONS ASSOCIATED WITH STATE BOARD ORDER WQ 2006-0012 AND WITH THE REVISED REPORT OF WASTE DISCHARGE SUBMITTED BY BOEING ON FEBRUARY 20. 2007

The State Board Order included the following provisions:

- Remanded the permit to the Regional Board to revise the provisions concerning Outfalls 001, 002, 011, and 018,
- Stayed the effluent limitations at Outfalls 011 and 018 pending a determination by the Regional Board deleting either Outfalls 011 and 018 or Outfalls 001 and 002,
- Directed the Regional Board to issue a Cease and Desist Order with the shortest possible compliance schedule and interim effluent limitations. The effective date of the CDO was to be January 19, 2006,
- Review the permit to ensure that numeric effluent limitations for different outfalls do not count the same violation twice in such a manner as to treat a single violation as multiple violations.
- In all other respects, the petitions were denied.

Orders R4-2006-0008 and R4-2006-0036 included numeric effluent limitations for discharges from Outfalls 001, 002, 011, and 018. Outfall 018 is located upstream of Outfall 002 and Outfall 011 is upstream of Outfall 001. The same effluent limitations were applicable to all four outfalls. The State Board Order concluded that Outfalls 001 and 002 were duplicative of Outfalls 011 and 018 and directed the Regional Board to retain only two of the four compliance points with numeric effluent limitations. Since Outfalls 011 and 018 are closer to the developed portion of the site, this Order (Order R4-2007-0055) retains the numeric effluent limitations. Outfall 011 will transport effluent from the groundwater treatment unit and storm water runoff. Therefore, the effluent limitations at Outfall 011 include daily maximum and monthly average concentrations. Outfall 018 will transport storm water runoff from the site; therefore this location is regulated with daily maximum limitations only. This is consistent with the NPDES dischargers in this Region that discharge storm water only.

Outfalls 001 and 002 have monitoring requirements with benchmarks and a requirement for the Discharger to implement BMPs that will be upgraded based on the monitoring data relative to the benchmark. The benchmarks for Outfall 001 will include daily maximum and monthly average limitations since the discharge from Outfall 011 and Outfall 001 will include treated groundwater from Outfall 019 and storm water runoff. Since the discharge at Outfall 001 will be composed of both storm water runoff and treated groundwater both the daily maximum and monthly average benchmarks are applicable. The benchmarks for Outfall 002 are the daily maximum effluent limitations stipulated for Outfalls 011 and 018, since Outfall 002 will transport storm water runoff only.

The State Board Order concluded that the discharge from Outfall 018 was duplicative of the discharge from Outfall 002 and that the discharge from Outfall 011 was duplicative of the Outfall 001. Discharges from Outfalls 018 only occur during storm events. Outfall 018 is located in the same subwatershed with several solid waste management units (SWMU). Flow leaving the R-2 Pond travels 4,500 feet prior to reaching Outfall 002. Prior to the discharge reaching Outfall 002 storm water from STL-IV and from various regions of the buffer zone will also enter the drainage. Storm water from the buffer zone will provide dilution for the contaminants in the discharge. However, storm water from STL-IV may contain elevated levels of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene, chromium, copper, lead, and zinc, all chemicals of concern associated with this SWMU. Therefore, discharges from Outfall 018 may pick up additional contaminants from storm water runoff traversing contaminated areas at STL-IV and entering the drainage prior to the water exiting Outfall 002.

Discharges from Outfall 011, Perimeter Pond, travel along the southeastern edge of Area 1 Burn Pit (A1BP) prior to entering the buffer zone. A partial list of the chemicals of concern in soil associated with the A1BP include perchlorate, dioxins, metals (including cadmium, chromium, selenium, copper, mercury, boron, etc.) total petroleum hydrocarbons, and pentachlorophenol. Downstream in the buffer zone discharges from the Perimeter Pond also join with storm water runoff from the southeastern portion of the COCA area of concern (AOC) and the Component Test Laboratory V (CTL V) AOC. Additional runoff from the buffer zone is added to the drainage prior to the flow reaching Outfall 001. Discharges from Outfall 011 may pick up additional contaminants from storm water runoff from the COCA and CTL V AOCs prior to being discharged offsite at Outfall 001.

Outfalls 001 and 002, are downstream from Outfalls 011 and 018. Outfall 001 includes storm water runoff from the southern portion of STL IV and the buffer zone south of Outfall 018. Outfall 002 includes storm water runoff from CTL V the COCA area, A1BP and the buffer zone south of Outfall 011. The discharger will be required to continue to monitor at Outfalls 001 and 002 while implementing BMPs to ensure that contaminants associated with site activities are not transported offsite by storm water runoff.

Based on the State Board Order, a Cease and Desist Order was developed to address new effluent limitations included in Order R4-2006-0008.

A Cease and Desist Order (Order R4-2007-0056) was adopted on November 1, 2007. The Cease and Desist Order included interim effluent concentrations and a time schedule for discharges form Outfalls 001 through 018 as directed by the Remand from State Board. The CDO also included time for the Discharger to implement engineered natural treatment systems at Outfalls 008 and 009. Included in that task was a requirement to assemble a panel of professionals with technical expertise and experience working with natural treatment systems to treat contaminants in storm water runoff. A number of tasks were to be assigned to the panel. They were to review site conditions, evaluate the flows that have been modeled for the site including the design storm recommendation previously provided by the Discharger, the contaminants of concern, the BMPs capable of treating the discharge to meet the final effluent limitations. Subsequently, the panel of experts would be required to select, design and oversee implementation of the selected BMPs.

VII. 2008 Report of Waste Discharge (ROWD)

On December 11, 2008, Boeing submitted a new Report of Waste Discharge. Supplemental material was submitted on February 2, 2009, to complete the ROWD. The ROWD included requests for a number of actions in the NPDES permit. Following is a summary of those requests and the Regional Board responses:

Remove Compliance Points at Outfalls 012 (Alpha Test Stand), 013 (Bravo Test Stand) and 014 (APTF): These outfalls were originally established to monitor the wastewater discharges associated with the rocket engine testing at these locations. Since that time the testing operations have ceased. However, Board staff believes that the testing operations have resulted in contamination in the areas which may be transported downstream via storm water runoff. Therefore, once the operations ceased, the requirements in the permit were altered to require monitoring of storm water runoff from

these areas. The Discharger requested a provision to terminate sampling once the structures are removed. Sampling after the structures are removed will provide information regarding the potential transport of residual contamination by storm water runoff. Therefore the request to remove the compliance points at Outfalls 012 through 014 has not been implemented.

Design Storm: Following the adoption of the NPDES permit on November 1, 2007, Order R4-2007-0055, and the Cease and Desist Order (R4-2007-0056), the Discharger assembled a panel with input from the Regional Board staff and water resources-focused environmental organizations to review site conditions, modeled flow, contaminants of concern and evaluate the BMPs capable of providing the required treatment to meet the final effluent limitations. The panel initially evaluated site conditions and on April 30, 2008, issued a report entitled "Expert Panel Final Consensus Recommendation on a Site Specific Design Storm for the SSFL." The Expert Panel recommended a site specific design storm defined as either 2.5 inches during a 24-hour period, or 0.6 inches in an hour, as measured at the Area IV rain gauge located at the SSFL.

The Regional Board has funded the preliminary work for the development of a regional design storm and the associated policy. This work is documented in the Fact Sheet in the section titled Regional Board's Wet-Weather Task Force. Regional Board staff anticipates that further work will be needed before proposing a regional design storm policy or any site-specific design storm, in order to further explore these assumptions and generalizations; evaluate the efficacy of the design storm for different pollutants and land uses; refine the data used in modeling the water quality outcomes of potential design storms and consider policy implications with regard to incorporating design storms into permits. It is therefore premature to establish a regional design storm or site-specific design storm prior to this additional technical work and prior to a full consideration of the policy considerations of adopting a regional design storm policy.

Regional Board staff also believes it is not appropriate to incorporate the design storm into the permit at this time. Depending on how the design storm is implemented, the size of the storm stipulated by the Expert Panel would result in storms each year that would generate runoff which may not be required to comply with the final effluent limitations that are currently in the permit. The development of a policy is essential to ensure that when a design storm is approved; the implementation of the design storm is consistent throughout the region. There is currently no policy in place for the Los Angeles Region or in any other region throughout the state that Regional Board staff is aware of. However, the work completed on the design storm provides the basis for the design of the BMPs around the site.

Composite versus Grab Sampling: The Discharger also requested to alter the type of monitoring required in the permit from grab to composite. The Expert Panel during the evaluation of the site and permit conditions recommended that using composite versus grab for constituents where composite sampling is appropriate would provide a more representative sample to evaluate contaminants in storm water runoff.

In May, 2004, the Regional Board issued a Section 13267 request for sampling at two locations using grab and composite results. The composite samples were collected over a three hour time span during storm events. The data collected did not yield significant differences in the detected concentrations of the constituents of concern. Since the data

collected previously indicates that there is no difference between grab and composite samples, the request to utilize composite sampling has not been incorporated.

Outfalls 008 and 009. Order R4-2007-0055 included a time schedule from November 1, 2007 through June 10, 2009 compliance for the discharges from site would be evaluated utilizing "benchmarks". This time schedule was to allow the assembly of the Expert Panel, and time to plan, design and implement the engineered natural treatment systems (ENTS). The Discharger has:

- The Panel has completed the following tasks:
  - Submitted a recommendation for the Design Storm;
  - Designed ENTs for Boeing owned property at Outfall 009; and
  - Designed ENTs for Outfall 008.
- The Discharger has:
  - Implemented Phase 1 of the ENTs project including culvert upgrades; and
  - Submitted application for Special Use Permit with Ventura County which is required to construct the ENTs.

The modification of the Special Use Permit requires California Environmental Quality Act (CEQA) review. This process takes about four or five months for a mitigated negative declaration. The time required can be increased significantly if the project requires additional evaluation.

Interim Source Removal Action: On December 3, 2008, the Regional Board issued a Section 13304 Order to perform an Interim/Source Removal Action (ISRA) of Soil in the Areas of Outfalls 008 and 009 Drainage Areas. The Order directed the Discharger to undertake source removal of impacted soils that are causing or contributing to violations of limitations contained in NPDES Permit No. CA0001309. Coordinating the efforts to implement the ENTs and the implementation of the source removal activities within both the Outfall 008 and 009 watersheds will result in the maximum benefit. Time will be required for planning, permitting, excavation of the soil, and subsequent re-stabilization of the impacted areas. Based on the required activities the Regional Board concludes that the three year times schedule is an appropriate time for compliance and it is as short as practicable. Therefore, the accompanying Cease and Desist Order includes a three year time schedule. Notwithstanding, the amount of time actually required, the SIP limits NPDES compliance schedules for priority pollutants to not later than May 17, 2010. Therefore, the WDR includes a compliance schedule which terminates on May 17, 2010. During this interim period (June 10, 2009 through May 17, 2010) the final effluent limitations included in the permit will be utilized as benchmarks. Exceedance of the benchmark will trigger upgrades of BMPs as directed in the associated waste discharge requirements (Section II.C.7).

The Discharger will utilize source removal actions coupled with the ENTs to comply with the final effluent limitations included in this Order.

VIII. Reasonable Potential Analysis - 2009

The new data submitted was utilized to complete a new RPA. The RPA did not yield any new constituents with reasonable potential (RP).

IX. SPECIFIC RATIONALES FOR EACH OF THE NUMERICAL EFFLUENT LIMITATIONS

A. The following table presents the effluent limitations and the specific rationales for pollutants that are expected to be present in the discharge from Outfalls 011, 018 and 019. The daily maximum effluent limitations are applicable for discharges of storm water runoff from Outfall 018 and 011. The daily maximum and monthly average effluent limitations are applicable for discharges from Outfalls 011 and 019(the groundwater treatment unit).

These effluent limitations will also be used as benchmarks when evaluating the performance of BMPs implemented at Outfalls 001 (daily maximum and monthly average) and Outfall 002 (daily maximum discharge limitations only).

		Discharge Limitations		
Constituents	**Units**	**Monthly Average**	**Daily Maximum**	**Rationale[1]**
pH	pH Units	---	6.5-8.5	Basin Plan
Temperature	°F	---	86	BPJ/Thermal Plan
Total suspended solids	mg/L	15	45	BPJ–Previous Order
$BOD_5$20°C	mg/L	20	30	BPJ – Previous Order
Oil and grease	mg/L	10	15	BPJ – Previous Order
Settleable solids	ml/L	0.1	0.3	BPJ – Previous Order
Total residual chlorine	mg/L	----	0.1	Basin Plan
Total dissolved solids	mg/L	----	950	Basin Plan
Chloride	mg/L	----	150	Basin Plan
Sulfate	mg/L	----	300	Basin Plan
Barium	mg/L	----	1.0	BPJ-Previous Order
Iron	mg/L	----	0.3	BPJ-Previous Order
Fluoride	mg/L	----	1.6	Basin Plan
Detergents (as MBAS)	mg/L	----	0.5	Basin Plan
Nitrate + Nitrate-N	mg/L	----	8.0	Basin Plan
Ammonia-N	mg/L	1.96©	10.1®	LA River Nutrients TMDL
Nitrate-N	mg/L	----	8.0	LA River Nutrients TMDL
Nitrite-N	mg/L	----	1.0	LA River Nutrients TMDL
Manganese	µg/L	----	50	BPJ-Previous Order
Cyanide	µg/L	4.3	8.5	CTR
Antimony	µg/L	----	6.0	Basin Plan-Title 22
Arsenic	µg/L	----	10	USEPA MCL
Beryllium	µg/L	----	4.0	Basin Plan-Title 22
Cadmium	µg/L	2.0	4.0/3.1$^{*\beta}$	CTR/TLA River Metals TMDL
Chromium (VI)	µg/L	8.1	16.3	CTR
Copper	µg/L	7.1	14.0	CTR
Lead	µg/L	2.6	5.2	CTR
Mercury	µg/L	0.05	0.1	CTR
Nickel	µg/L	35	96	CTR
Selenium	µg/L	4.1	8.2/5$^{\#\beta}$	CTR/LA River Metals TMDL
Silver	µg/L	2.0	4.1	CTR

[1] The rationale includes plans, policies, regulations, and other sources of effluent limitations. Basin Plan is Water Quality Control Plan Los Angeles Region, BPJ is Best Professional Judgement, TMDL is Total Maximum Daily Load, CTR is California Toxics Rule (40 CFR Part 131).

* Effluent limit applies only during wet weather discharges.

$^{\beta}$ This effluent limit shall be deemed vacated at such time as Regional Board Resolutions R05-006 and R05-007 are vacated in compliance with a writ of mandate in the matter of Cities of Bellflower et al v. State Water Resources Control Board et al, Los Angeles Superior Court # BS101732. The Regional Board shall provide notice to the discharger of any such action.

Effluent limit applies only during dry weather discharges.

© Thirty day average at ph = 7.9 and 20°C, when hourly samples are collected and composited or only one grab sample is collected.

® One hour average WLA at 7.9 pH and 20°C, applies if hourly samples are taken throughout the storm and each is analyzed. No single sample may exceed the 10.1 mg/L limit.

		Discharge Limitations		
Constituents	**Units**	**Monthly Average**	**Daily Maximum**	**Rationale[1]**
Thallium	µg/L	----	2.0	Basin Plan
Zinc	µg/L	53.6	119	CTR
1,1-Dichloroethylene	µg/L	3.2	6.0	CTR/BPJ-Title 22
Trichloroethylene	µg/L	----	5.0	BPJ/Basin Plan-Title 22
Perchlorate	µg/L	----	6.0	BPJ/DHS Action Level
2,4,6-Trichlorophenol	µg/L	6.5	13.0	CTR
2,4-Dinitrotoluene	µg/L	9.1	18.3	CTR
Alpha-BHC	µg/L	0.01	0.03	CTR
Bis(2-ethylhexyl)phthalate	µg/L	----	4.0	Basin Plan/Title 22
N-Nitrosodimethylamine	µg/L	8.1	16.3	CTR
Pentachlorophenol	µg/L	8.2	16.5	CTR
TCDD	µg/L	1.4E-08	2.8E-08	CTR
Radioactivity Gross Alpha Gross Beta	 pCi/L pCi/L	 ---- ----	 15 50	 BPJ/Basin Plan BPJ/Basin Plan
Combined Radium-226 & Radium-228	pCi/L	----	5	BPJ/Basin Plan
Tritium	pCi/L	----	20,000	BPJ/Basin Plan
Strontium-90	pCi/L	----	8	BPJ/Basin Plan

B. Following are the effluent limitations and the specific rationales for pollutants discharged from Outfalls 003 through 010. The effluent limitations are effective on the effective date of the permit for Outfalls 003 through 007 and 010. Discharges from Outfalls 008 and 009 must demonstrate compliance with the final effluent limitations after May 17, 2010. During the interim time period (June 10, 2009 through May 17, 2010) the final limitations serve as benchmarks at Outfalls 008 and 009.

Constituents	Units	Discharge Limitations		Rationale
		Monthly Average	Daily Maximum	
pH	pH Units	----	6.5-8.5	Basin Plan
Oil and grease	mg/L	----	15	BPJ
Chloride	mg/L	----	150	Basin Plan
Sulfate	mg/L	----	250[2a]	Basin Plan
Sulfate	mg/L	----	300[2b]	Basin Plan
Boron[1]	mg/L	----	1.0	Basin Plan
Fluoride	mg/L	----	1.6	Basin Plan
Nitrate + Nitrate-N	mg/L	----	10.0[2a]	Basin Plan
Nitrate + Nitrate-N	mg/L	----	8[2b]	Basin Plan
Total dissolved solids	mg/L	----	850[2a]	Basin Plan
Total dissolved solids	mg/L	----	950[2b]	Basin Plan
Ammonia-N (Outfall 008 only)	mg/L	----	10.1®	LA River Nutrients TMDL
Nitrate-N (Outfall 008 only)	mg/L	----	8.0	LA River Nutrients TMDL
Nitrite-N (Outfall 008 only)	mg/L	----	1.0	LA River Nutrients TMDL
Selenium (Outfall 008 only)	µg/L	----	5#β	LA River Metals TMDL
Zinc (Outfall 008 only)	µg/L	----	159*β	LA River Metals TMDL
Antimony	µg/L	----	6.0	Basin Plan/Title 22
Cadmium	µg/L	----	4.0/3.1*β	CTR/LA River Metals TMDL
Copper	µg/L	----	14.0	CTR
Mercury	µg/L	----	0.13	Calleguas Creek Metals TMDL
Nickel	µg/L	----	100	Calleguas Creek Metals TMDL/Basin Plan (Title 22)
Thallium	µg/L	----	2.0	Basin Plan
Lead	µg/L	----	5.2	CTR
TCDD	µg/L	----	2.8E-08	CTR
Perchlorate	µg/L	----	6.0	BPJ/ DHS Notification Level
Radioactivity				
Gross Alpha	pci/L	----	15	Basin Plan/Title 22
Gross Beta	pci/L	----	50	Basin Plan/Title 22
Combined Radium-226 & Radium-228	pci/L	----	5	Basin Plan/Title 22
Tritium	pci/L	----	20,000	Basin Plan/Title 22
Strontium-90	pci/L	----	8	Basin Plan/Title 22

[1] Limit is for discharges for Outfalls 003 through 007, 009, and 010 which flows to Calleguas Creek. It is not applicable to discharges from Outfall 008 to Dayton Canyon Creek.
[2a] This limit is for discharges which flow to Calleguas Creek from Outfalls 003 through 007, 009, and 010.

C. Following are the benchmarks and the specific rationales for pollutants discharged in storm water runoff from Outfalls 012 through 014.

Constituents	Units	Discharge Limitations		Rationale
		Monthly Average	Daily Maximum	
pH	pH Units	----	6.5-8.5	Basin Plan
Oil and grease	mg/L	----	15	BPJ
Chloride	mg/L	----	150	Basin Plan
Sulfate	mg/L	----	300	Basin Plan
Fluoride	mg/L	----	1.6	Basin Plan
Nitrate + Nitrate-N	mg/L	----	8	Basin Plan
Total dissolved solids	mg/L	----	950	Basin Plan
Settleable solids	ml/L	----	0.3	Basin Plan
Total suspended solids	mg/L	----	45	BPJ
Ammonia-N	mg/L	----	10.1®	LA River Nitrogen TMDL
Nitrate-N	mg/L	----	8.0	LA River Nitrogen TMDL
Nitrite-N	mg/L	----	1.0	LA River Nitrogen TMDL
Cadmium	µg/L	----	$3.1^{*\beta}$	LA River Metals TMDL
Selenium	µg/L	----	$5^{\#\beta}$	LA River Metals TMDL
Zinc	µg/L	----	$159^{*\beta}$	LA River Metals TMDL
Copper	µg/L	----	13.5	CTR
Mercury	µg/L	----	0.10	CTR
Lead	µg/L	----	5.2	CTR
TCDD	µg/L	----	2.8E-08	CTR
Naphthalene	µg/L	----	21	BPJ
Total Petroleum Hydrocarbons	µg/L	----	100	BPJ
Ethylene dibromide	µg/L	----	50	BPJ
Tertiary butyl alcohol	µg/L	----	12	BPJ
1,4-dioxane	µg/L	----	3	BPJ
Perchlorate	µg/L	----	6.0	BPJ/ DHS Notification Level

X. Receiving Water Limitations

A. The discharge shall not cause the concentration of constituents in Arroyo Simi, a tributary of Calleguas Creek, in excess of the following limitations.

Constituents	Units	Discharge Monthly Average	Limitations Daily Maximum	Rationale
Chlorpyrifos	µg/L	--	0.02	Toxicity TMDL
Diazinon	µg/L	--	0.16	Toxicity TMDL
Chlordane	µg/L	--	0.001	OC Pest & PCBs TMDL
4,4-DDD	µg/L	--	0.0014	OC Pest & PCBs TMDL
4,4-DDE	µg/L	--	0.001	OC Pest & PCBs TMDL

Constituents	Units	Discharge Monthly Average	Limitations Daily Maximum	Rationale
4,4-DDT	µg/L	--	0.001	OC Pest & PCBs TMDL
Dieldrin	µg/L	--	0.0002	OC Pest & PCBs TMDL
PCBs	µg/L	--	0.0003	OC Pest & PCBs TMDL
Toxaphene	µg/L	--	0.0003	OC Pest & PCBs TMDL

XI. Receiving Water Sediment Effluent Limitations

A. Final Ambient WLAs for Pollutants in Sediment for Storm Water Dischargers

The following are the final ambient WLAs for storm water permittees that were established in the Calleguas Creek OC Pesticides & PCBs TMDL. They are measured as in-stream annual averages at the base of each subwatershed where the discharges are located.

The final WLAs must be achieved and become sediment limitations after the sampling indicates that the Discharger is able to comply with the final WLAs or at the end of the 20-year compliance schedule specified in the TMDL (March 24, 2026), which ever occurs first. In either event, the permit will be reopened at that time to include appropriate sediment limitations.

Constituents	Units	Discharge Monthly Average	Limitations Daily Maximum	Rationale
Chlordane	µg/g	--	0.0033	OC Pest & PCBs TMDL
4,4-DDD	µg/g	--	0.002	OC Pest & PCBs TMDL
4,4-DDE	µg/g	--	0.0014	OC Pest & PCBs TMDL
4,4-DDT	µg/g	--	0.0003	OC Pest & PCBs TMDL
Dieldrin	µg/g	--	0.0002	OC Pest & PCBs TMDL
PCBs	µg/g	--	0.12	OC Pest & PCBs TMDL
Toxaphene	µg/g	--	0.0006	OC Pest & PCBs TMDL

B. Interim Ambient WLAs for Pollutants in Sediment for Storm Water Dischargers

The following sediment interim WLAs for Arroyo Simi are effective June 26, 2014 (five years from the effective date of this permit).

Constituents	Units	Discharge Monthly Average	Limitations Daily Maximum	Rationale
Chlordane	µg/g	--	0.0033	OC Pest & PCBs TMDL
4,4-DDD	µg/g	--	0.014	OC Pest & PCBs TMDL
4,4-DDE	µg/g	--	0.17	OC Pest & PCBs TMDL
4,4-DDT	µg/g	--	0.025	OC Pest & PCBs TMDL
Dieldrin	µg/g	--	0.0011	OC Pest & PCBs TMDL
PCBs	µg/g	--	25.7	OC Pest & PCBs TMDL
Toxaphene	µg/g	--	0.23	OC Pest & PCBs TMDL

XII. Monitoring Requirements

A. Effluent Monitoring

To access the impact of the discharge to the beneficial uses of the receiving waters, the Discharger is required to monitor the conventional and priority pollutants and other identified parameters.

B. Storm Water Monitoring and Reporting

Storm water runoff discharges from the SSFL are subject to requirements stipulated in this NPDES permit and the Discharger is required to comply with all applicable provisions of the Storm Water Pollution Prevention Plan (Attachment A of the Order). This plan includes requirements to develop, implement, and when appropriate update a Storm Water Pollution Prevention Plan (SWPPP) along with Best Management Practices (BMPs) with the goal of preventing all pollutants from contacting storm water and with the intent of keeping all contaminants of concern from moving into receiving waters. The BMPs are designed to treat flows generated by storm water runoff from a storm depth up to 2.3 inches to meet the final effluent limitations.

C. Receiving Water Monitoring and Reporting

The Calleguas Creek Toxicity TMDL and the Calleguas Creek OC Pesticides & PCBs TMDL include receiving water concentrations that are to be accomplished utilizing BMPs. The OC Pesticides & PCBs TMDL includes sediment contaminant concentrations for tributaries of Calleguas Creek as well. This permit includes monitoring requirements to demonstrate compliance with the stipulated effluent limitations.

A requirement has also been included to require priority pollutant monitoring in the Arroyo Simi and in Bell Creek once during the five year permit term.

D. Sediment Monitoring and Reporting

The Calleguas Creek OC Pesticides & PCBs TMDL includes waste load allocations and a requirement for monitoring of the sediment. The TMDL stipulates that compliance with the sediment based WLAs is measured as an in-stream annual average at the base of each subwatershed where the discharges are located.

E. Bioassessment Monitoring

The goals of the bioassessment monitoring for the Arroyo Simi and Los Angeles River are to:

- Determine compliance with receiving water limitations;
- Monitor trends in surface water quality;
- Ensure protection of beneficial uses;
- Provide data for modeling contaminants of concern;
- Characterize water quality including seasonal variation of surface waters within the watershed;
- Assess the health of the biological community; and
- Determine mixing dynamics of effluent and receiving waters in the estuary.

TABLE R1

Boeing SSFL
Outfalls 001 and 002
(CA0001309, CI-6027)

					CTR CRITERIA				Basin Plan	REASONABLE POTENTIAL ANALYSIS (RPA)							HUMAN HEALTH CALCULATIONS		
					Freshwater		Human Health										Organisns Only		
CTR#	DATE	Units	CV	MEC	C acute = CMC tot	C chronic = CCC tot	Not applicable C hh W&O	C hh O	Title 22 GWR	Lowest C	MEC >= Lowest C	Tier 1 - Need limit?	B>C	Tier 2 - Need limit?	Tier 3 - other info. ?	Tier 3 - need limit?	AMELhh = ECA = C hh O	MDEL/ AMEL multiplier	MDEL hh
1	Antimony	µg/L	0.6	0.43	NONE	NONE	14	4300	6	6.0	No	Go to Tier 2	No	NO	Yes	Yes	4300	2.01	8627
2	Arsenic	µg/L	0.6	6.7	340	150	NONE	NONE	10	10.0	No	Go to Tier 2	No	NO	NO	NO	NONE	2.01	
3	Beryllium	µg/L	0.6	11	NONE	NONE	Narrative	Narrative	4	4.0	YES	Yes	No	Yes	Yes	Yes	Narrative	2.01	
4	Cadmium*	µg/L	0.8971	6.9	4.6	2.4	Narrative	Narrative	5	2.4	YES	Yes	No	Yes	Yes	Yes	Narrative	2.01	
5a	Chromium III*	µg/L	2.2223	100	1741	209	Narrative	Narrative	50	50.0	YES	Yes	No	Yes	Yes	Yes	Narrative	2.01	
5b	Chromium VI	µg/L	0.6	0	16.3	11.5	Narrative	Narrative		11.5	No	Go to Tier 2	No	NO	NO	NO	Narrative	2.01	
6	Copper*	µg/L	1.5861	100	13.5	9.4	1300	NONE		9.4	YES	Yes	No	Yes	Yes	Yes	NONE	2.0	
7	Lead*	µg/L	5.1437	160	82.2	3.2	Narrative	Narrative		3.2	YES	YES	No	NO	NO	NO	Narrative	2.0	
8	Mercury	µg/L	0.8837	0.32	Reserved	Reserved	0.05	0.051	2	0.05	YES	Yes	No	Yes	Yes	Yes	0.051	2.0	0.10
9	Nickel*	µg/L	0.6	23	471	52	610	4600	100	52.16	No	Yes	No	Yes	Yes	Yes	4600	2.01	9228
10	Selenium	µg/L	0.8864	0.63	Reserved	5	Narrative	Narrative	50	5.00	No	Go to Tier 2	No	NO	NO	NO	Narrative	2.01	
11	Silver*	µg/L	0.6	0.14	4	none	NONE	NONE		4.00	No	Go to Tier 2	No	NO	NO	NO	NONE	2.01	
12	Thallium	µg/L	0.6	0.46	NONE	NONE	1.7	6.3	2	2.00	No	Go to Tier 2	No	NO	NO	NO	6.3	2.01	13
13	Zinc*	µg/L	1.191	160	122.7	121.7	none	NONE		121.70	YES	Yes	No	Yes	Yes	Yes	NONE	2.01	
14	Cyanide	µg/L	0.6	18	22	5.2	700	220,000	200	5.2	YES	YES	No	YES	YES	YES	220000	2.0	441362
15	Asbestos	Fibers/ L			NONE	NONE	7,000,000	NONE	7x10^6	7x10^6	No	Go to Tier 2	No	NO	NO	NO			
16	2,3,7,8-TCDD (Dioxin)	µg/L	1.2325	5E-06	NONE	NONE	1.3E-08	1.4E-08	3x10^-5	1.4E-08	YES	Yes	Yes	Yes	Yes	Yes	0.000000014	2.01	2.81E-08
30	1,1-Dichloroethylene	µg/L	0.6		NONE	NONE	0.057	3.2	6	3.2	No	Go to Tier 2	No	NO	NO	NO	3.2	2.01	6
43	Trichloroethylene	µg/L	1.4346	2.4	NONE	NONE	2.7	81	5	5	No	Go to Tier 2	No	NO	Yes	Yes	81	2.01	163
53	Pentachlorophenol	µg/L	0.6		32.54	24.97	0.28	8.2			No	Go to Tier 2	No	NO	Yes	Yes	8.2	2.01	16
55	2,4,6-trihlorophenol	µg/L	0.6		NONE	NONE	2.1	6.5		6.5	No	Go to Tier 2	No	NO	NO	NO	6.5	2.01	13
68	Bis(2-Ethylhexyl) Phthalate	µg/L	0.9114	5.7	NONE	NONE	1.8	5.9	4	4	No	YES					5.9	2.01	12
82	2,4-Dinitrotoluene	µg/L	0.6	0.23	NONE	NONE	0.11	9.1		9.1	No	Go to Tier 2	No	NO	NO	NO	9.1	2.01	18
96	N-Nitrosodimethylamine	µg/L	0.6		NONE	NONE	0.00069	8.1		8.1	No	Go to Tier 2	No	NO	Yes	Yes	8.1	2.01	16
103	alpha-BHC	µg/L	0.6		NONE	NONE	0.0039	0.013		0.013	No	Go to Tier 2	No	NO	Yes	Yes	0.013	2.01	0

FOOTNOTE:
* These metals are hardness dependent. CTR criteria was calculated using an average receiving water hardness of 100 mg/L.
** Outfall 001 and 019 only when Outfall 019 is dischargeing. Effluent limits are benchmarks at Outfalls 001 and 002.

TABLE R1

Boeing SSFL
Outfalls 001 and 002
(CA0001309, CI-6027)

CTR#	DATE	Units	AQUATIC LIFE CALCULATIONS Freshwater: ECA acute multiplier (p.7)	LTA acute	ECA chronic multiplier	LTA chronic	Lowest LTA	AQUATIC LIFE CALCULATIONS Freshwater: AMEL multiplier (n=4)	AMEL aq.life	MDEL multiplier (n=4)	MDEL aqlife	PROPOSED LIMITS: Lowest AMEL**	Lowest MDEL	Recommendation
1	Antimony	µg/L	0.32		0.53			1.6		3.1		--	6	BPJ used to implement Basin Plan limit
2	Arsenic	µg/L	0.32	109	0.53	79.1	79.1	1.6	123	3.1	246	--	10	BPJ used to implement US EPA MCL.
3	Beryllium	µg/L	0.32		0.53			1.6		3.1		--	4	BPJ used to implement Basin Plan limit
4	Cadmium*	µg/L	0.32	1.5	0.53	1.3	1.3	1.6	2	3.1	4	2.0	4	Limit Based on CTR
5a	Chromium III*	µg/L	0.32	559	0.53	110.4	110.4	1.6	171	3.1	344	--	--	Interim Monitoring
5b	Chromium VI	µg/L	0.32	5	0.53	6.0	5.2	1.6	8	3.1	16	8.1	16	Limit Based on CTR
6	Copper*	µg/L	0.32	4.3	0.53	4.9	4.3	1.6	7.1	3.1	13.5	7.1	14	Limit Based on CTR
7	Lead*	µg/L	0.32	26.4	0.53	1.7	1.7	1.6	2.6	3.1	5.2	2.6	5.2	Limit Based on CTR
8	Mercury	µg/L	0.32		0.53			1.6		3.1		0.05	0.10	Limit Based on CTR
9	Nickel*	µg/L	0.32	151.2	0.53	27.5	27.5	1.6	35	3.1	96	35	96	Limit Based on CTR
10	Selenium	µg/L	0.32		0.53	2.6	2.6	1.6	4.1	3.1	8.2	4.1	8.2	Limit Based on CTR
11	Silver*	µg/L	0.32	1.3	0.53		1.3	1.6	2.0	3.1	4	2	4.0	Limit Based on CTR
12	Thallium	µg/L	0.32		0.53			1.6		3.1		--	2	BPJ used to implement Basin Plan limit
13	Zinc*	µg/L	0.32	39.4	0.53	64.2	39.4	1.6	54	3.1	119	53.6	119	Limit Based on CTR
14	Cyanide	µg/L	0.3	7.1	0.53	2.7	2.7	1.6	4.3	3.1	8.5	4.3	8.5	Limit Based on CTR
15	Asbestos	Fibers/L												Interim Monitoring - No CTR-based Limit
16	2,3,7,8-TCDD (Dioxin)	µg/L	0.32		0.53			1.6		3.1		1.40E-08	2.8E-08	Limit Based on CTR
30	1,1-Dichloroethylene	µg/L	0.32		0.53			1.6		3.1		3.2	6.0	Limit Based on CTR/BPJ Title-22
43	Trichloroethylene	µg/L	0.32		0.53			1.6		3.1		--	5	Limit based on BPJ/Basin Plan-Title 22
53	Pentachlorophenol	µg/L	0.32	10.4	0.53	13.16836558	10.4	1.6	16	3.1	33	8.2	16	Limit Based on CTR
55	2,4,6-trihlorophenol	µg/L	0.32		0.53			1.6		3.1		6.5	13.0	Limit Based on CTR
68	Bis(2-Ethylhexyl) Phthalate	µg/L	0.32		0.53			1.6		3.1		--	4	Limit Based on CTR
82	2,4-Dinitrotoluene	µg/L	0.32		0.53			1.6		3.1		9.1	18.3	Limit Based on CTR
96	N-Nitrosodimethylamine	µg/L	0.32		0.53			1.6		3.1		8.1	16.3	Limit Based on CTR
103	alpha-BHC	µg/L	0.32		0.53			1.6		3.1		0.01	0.03	Limit Based on CTR

FOOTNOTE:
* These metals are hardness dependent. CTR criteria was calculated using an average receiving water hardness of 100 mg/L.
** Outfall 001 and 019 only when Outfall 011

Table A3

Reasonable Potential Analysis for Non-Priority Pollutants in Storm Water
The Boeing Company
(Santa Susana Field Laboratory)
Outfalls 001and 002
(CA0001309, CI-6027)

CONSTITUENT	Units	Number of Samples	Maximum Observed Effluent Concentration	CV	Multiplier	Projected Maximum Effluent Concentration (99/99)	Dilution Ratio	Background Concentration	Projected Maximum Receiving Water Concentration	Water Quality Objectives	BU - Beneficial use protection NC-Human noncarcinogen AP-Aquatic life protection	REASONABLE POTENTIAL
Iron	mg/L	25	97.00	2.43	6.68	648	0		648	0.3	BU	YES
Manganese	mg/L	17	11000	3.70	14.02	154250	0		154250	50	BU	YES
Barium	mg/L	5	0.07	0.33	2.27	0.15	0		0.15	1	BU	NO
Settleable solids	mg/L	57	10	4.93	5.09	50.89	0		50.89	0.3	BU	YES
Total Dissolved Solids	mg/L	58	1000	0.57	1.61	1609.90	0		1609.90	950	BU	Yes
Total Suspended solids	mg/L	57	33000.00	6.71	5.88	193964	0		193964	45	BU	YES
$BOD_5 20^oC$	mg/L	58	33	2.03	3.14	103.72	0		103.72	30	BU	YES
Oil and Grease	mg/L	58	6.3	1.14	2.27	14.29	0		14.29	15	BU	NO
Chloride	mg/L	58	56	0.53	1.56	87.48	0		87.48	150.00	BU	NO
Fluoride	mg/L	7	0.45	0.21	1.60	0.72	0		0.72	1.60	BU	NO
Sulfate	mg/L	58	400	0.86	1.95	780.69	0		780.69	300	BU	YES
Gross Alpha	pci/L	15	701	3.61	15.75	11039.20	0		11039.20	15	BU	YES
Gross Beta	pci/L	11	426	2.85	17.38	7404.26	0		7404.26	50	BU	YES
Strontium	pci/L	9	0.16	2.69	20.29	3.25	0		3.25	8	BU	NO
Radium 226 and 228	pci/L	8	17.0	2.32	19.12	325.25	0		325.25	5	BU	YES
Tritium	pci/L	9	157	-7.84	67.88	10658	0		10658	20000	BU	NO
Nitrate + Nitrite as Nitrogen	mg/L	51	10	1.78	3.16	32	0		32	8	BU	YES
Surfactants (MBAS)	mg/L	58	4.4	2.50	3.53	16	0		16	0.5	BU	YES
Residual Chlorine	mg/L	4	0.14	0.62	4.96	1	0		1	0.1	BU	YES
Ammonia as Nitrogen	mg/L	59	18	2.14	3.20	58	0		58	10.1	BU	YES
Nirate as Nitrogen	mg/L	12	3.8	1.14	5.42	21	0		21	8.0	BU	YES

TABLE R1

Boeing SSFL
Outfalls 003 -007, and 010
(CA0001309, CI-6027)

					CTR CRITERIA				Basin Plan	REASONABLE POTENTIAL ANALYSIS (RPA)								
					Freshwater		Human Health											
CTR#	DATE	Units	CV	MEC	C acute = CMC tot	C chronic = CCC tot	Not applicable C hh W&O	C hh O	Title 22 GWR	Lowest C		MEC >= Lowest C	Tier 1 - Need limit?	B (RD-1)	B>C	Tier 2 - Need limit?	Tier 3 - other info. ?	Tier 3 - need limit?
1	Antimony	µg/L	2.83	35	35	NONE	NONE	14	4300	6	6.0		YES	Go to Tier 2		No	Yes	Yes	YES
2	Arsenic	µg/L	0.6979	10	10	340	150	NONE	NONE	10	10.0		No	Go to Tier 2		No	NO	NO	NO
4	Cadmium*	µg/L	1.66	1.6	1.6	4.6	2.4	Narrative	Narrative	5	2.4		No	Go to Tier 2		No	NO	Yes	YES
5a	Chromium III*	µg/L	1.0626	13	13	1741	209	Narrative	Narrative		209.3		No	Go to Tier 2		No	NO	NO	NO
5b	Chromium VI	µg/L	0.6		0	16.3	9.4	Narrative	Narrative	50	9.4		No	Go to Tier 2		No	NO	NO	NO
6	Copper*	µg/L	1.1	34	34	13.5	9.4	1300	NONE		9.4		YES	Yes		No	Yes	Yes	YES
7	Lead*	µg/L	2.97	79	79	82.2	3.2	Narrative	Narrative		3.2		YES	Yes		No	Yes	Yes	YES
8	Mercury	µg/L	1.2	0.89	0.89	Reserved	Reserved	0.05	0.051	2	0.05		YES	Yes		No	Yes	Yes	YES
9	Nickel*	µg/L	1.2451	15	15	470.94	52.1564694	610	4600	100	52.16		No	Go to Tier 2		No	NO	Yes	Yes
10	Selenium	µg/L	0.6	4.7	4.7	Reserved	5	Narrative	Narrative	50	5.00		No	Go to Tier 2		No	NO	Yes	Yes
11	Silver*	µg/L	0.6	3.1	3.1	4	none	NONE	NONE		4.00		No	Go to Tier 2		No	NO	NO	NO
12	Thallium	µg/L	0.6	0.34	0.34	NONE	NONE	1.7	6.3	2	2.00		No	Go to Tier 2		No	NO	NO	Yes
13	Zinc*	µg/L	1.2906	91	91	122.7	121.7	none	NONE		121.70		No	Go to Tier 2		No	NO	Yes	Yes
14	Cyanide	µg/L	0.6	2.9	2.9	22	5.2	700	220,000	200	5.2		No	No		No	NO	NO	No
16	2,3,7,8-TCDD (Dioxin)	µg/L	0.6	2E-04	0.00019	NONE	NONE	1.3E-08	1.4E-08	3x10^-5	1.4E-08		YES	Yes		No	Yes	Yes	YES
20	Bromoform	µg/L	0.6	3.1	3.1	NONE	NONE	4.3	360		360	ND	No	Go to Tier 2		No	NO	NO	NO
23	Dibromochloromethane	µg/L	0.6	2.8	2.8	NONE	NONE	0.401	34		34	ND	No	Go to Tier 2		No	NO	NO	NO
35	Methyl chloride	µg/L	0.60	0.43	0.43	NONE	NONE	Narrative	Narrative		Narrative	ND	No Criteria Available	Go to Tier 2	No data		NO	NO	NO
36	Methylene chloride	µg/L	0.60	1.40	1.4	NONE	NONE	4.7	1,600		1,600	ND	No	Go to Tier 2		No	NO	NO	NO
41	1,1,1-Trichloroethane	µg/L	0.6	0.76	0.76	NONE	NONE	Narrative	Narrative	200	200		No	Go to Tier 2		No	NO	NO	NO
43	Trichloroethylene	µg/L	0.6	0.66	0.66	NONE	NONE	2.7	81	5	5		No	Go to Tier 2		No	NO	NO	NO

FOOTNOTE:

* These metals are hardness dependent. CTR criteria was calculated using an average receiving water hardness of 100 mg/L.

TABLE R1

Boeing SSFL
Outfalls 003 -007, and 010
(CA0001309, CI-6027)

CTR#	DATE	Units	HUMAN HEALTH CALCULATIONS						ECA acute multiplier (p.7)
			Water & Organism			Organisns Only			
			AMEL hh = ECA = C hh W &O	MDEL/AMEL multiplier (n=4)	MDEL hh	AMELhh = ECA = C hh O	MDEL/ AMEL multiplier	MDEL hh	
1	Antimony	µg/L		3.24		4300	3.24		0.10
2	Arsenic	µg/L		2.15		NONE	2.15		0.28
4	Cadmium*	µg/L		2.96		Narrative	2.96		0.13
5a	Chromium III*	µg/L		2.58		Narrative	2.58		0.19
5b	Chromium VI	µg/L				Narrative	2.01		0.32
6	Copper*	µg/L		2.63		NONE	2.6		0.18
7	Lead*	µg/L		3.26		Narrative	3.3		0.09
8	Mercury	µg/L	0.05	2.71	0.135726	0.051	2.7	0.14	0.17
9	Nickel*	µg/L		2.73		4600	2.73	12564	0.17
10	Selenium	µg/L		2.01		Narrative	2.01		0.32
11	Silver*	µg/L		2.01		NONE	2.01		0.32
12	Thallium	µg/L		2.01		6.3	2.01	13	0.32
13	Zinc*	µg/L		2.76		NONE	2.76		0.16
14	Cyanide	µg/L	700	2.01	1404.332	220000	2.0	441362	0.32
16	2,3,7,8-TCDD (Dioxin)	µg/L		2.01		0.000000014	2.01	2.81E-08	0.32
20	Bromoform	µg/L		2.01			2.01		0.32
23	Dibromochloromethane	µg/L	0.401	2.01	0.804482		2.01		0.32
35	Methyl chloride	µg/L		2.01			2.01		0.32
36	Methylene chloride	µg/L		2.01			2.01		0.32
41	1,1,1-Trichloroethane	µg/L		2.01			2.01		0.32
43	Trichloroethylene	µg/L		2.01			2.01		0.32

FOOTNOTE:

* These metals are hardness dependent. CTR criteria was calculated using an average receiving water hardness of 100 mg/L.

TABLE R1

Boeing SSFL
Outfalls 003 -007, and 010
(CA0001309, CI-6027)

CTR#	DATE	Units	AQUATIC LIFE CALCULATIONS Freshwater LTA acute	ECA chronic multiplier	LTA chronic	Lowest LTA	AQUATIC LIFE CALCULATIONS Freshwater AMEL multiplier (n=4)	AMEL aq.life	MDEL multiplier (n=4)	MDEL aqlife	PROPOSED LIMITS Lowest AMEL	Lowest MDEL	Recommendation
1	Antimony	µg/L		0.15			3.24		10.5		---	6	RP Limit based Basin Plan/Title 22.
2	Arsenic	µg/L	95.8	0.48	72.2	72.2	1.65	119.1	3.5	256.3	---	---	Interim Monitoring - No RP
4	Cadmium*	µg/L	0.6	0.24	0.6	0.6	2.53	1.5	7.5	4.4	---	4	BPJ used to apply limit
5a	Chromium III*	µg/L	336.2	0.36	74.3	74.3	2.01	149.0	5.2	384.7	---	---	Interim Monitoring - No CTR-based Limit
5b	Chromium VI	µg/L	5.2	0.53	4.9	4.9	1.55	7.7	3.1	15.4	---	---	Interim Monitoring - No CTR-based Limit
6	Copper*	µg/L	2.5	0.34	3.2	2.5	2.1	5.1	5.4	13.5	---	14	RP limit based upon CTR
7	Lead*	µg/L	7.7	0.15	0.5	0.5	3.3	1.5	10.7	5.2	---	5.2	RP Limit Based on CTR
8	Mercury	µg/L		0.32			2.2		5.9		---	0.130	RP limit based on CTR
9	Nickel*	µg/L	79.2	0.31	16.2	16	2.18	35.3	5.9	100.0	---	100	Limit Calleguas Crrek TMDl
10	Selenium	µg/L		0.53	2.6	2.6	1.55	4.1	3.1	8.2	---	5	Limit LA River TMDL
11	Silver*	µg/L	1.3	0.53		1.3	1.55	2.0	3.1	4.0	---	---	Interim Monitoring - No CTR-based Limit
12	Thallium	µg/L		0.53			1.55		3.1		---	2	BPJ used to apply Basin Plan Criteria
13	Zinc*	µg/L	20.0	0.30	36.7	20	2.22	44.4	6.1	159.0	---	159	Limit LA River TMDL
14	Cyanide	µg/L	7.1	0.53	2.7	2.7	1.55	4.3	3.1	8.5	---	---	Interim Monitoring - No CTR-based Limit
16	2,3,7,8-TCDD (Dioxin)	µg/L		0.53			1.55		3.1		---	2.8.E-08	RP Limit Based on CTR.
20	Bromoform	µg/L		0.53			1.55		3.1		---	---	Interim Monitoring - No Limit
23	Dibromochloromethane	µg/L		0.53			1.55		3.1		---	---	Interim Monitoring - No Limit
35	Methyl chloride	µg/L		0.53			1.55		3.1		---	---	Interim Monitoring - No Limit
36	Methylene chloride	µg/L		0.53			1.55		3.1		---	---	Interim Monitoring - No Limit
41	1,1,1-Trichloroethane	µg/L		0.53			1.55		3.1		---	---	Interim Monitoring - No Limit
43	Trichloroethylene	µg/L		0.53			1.55		3.1		---	---	Interim Monitoring - No Limit

FOOTNOTE:

* These metals are hardness dependent. CTR criteria was calculated using an average receiving water hardness of 100 mg/L.

Table A3

Reasonable Potential Analysis for Non-Priority Pollutants in Storm water
The Boeing Company
(Santa Susana Field Laboratory)
Outfalls 003-007,010
(CA0001309, CI-6027)

CONSTITUENT	Units	Number of Samples	Maximum Observed Effluent Concentration	CV	Multiplier	Projected Maximum Effluent Concentration (99/99)	Dilution Ratio	Background Concentration	Projected Maximum Receiving Water Concentration	Water Quality Objectives	BU - Beneficial use protection NC-Human noncarcinogen AP-Aquatic life protection	REASONABLE POTENTIAL
Total Dissolved Solids	mg/L	157	980	0.85	1.37	1344.22	0		1344.22	850	BU	Yes
Oil and Grease	mg/L	157	33	2.12	1.75	57.78	0		57.78	15	BU	YES
Boron	mg/L	21	0.18	1.54	5.08	0.91	0		0.91	1.0	BU	NO
Chloride	mg/L	157	210	1.44	1.58	330.84	0		330.84	150	BU	YES
Fluoride	mg/L	9	0.46	0.23	1.61	0.74	0		0.74	1.6	BU	NO
Sulfate	mg/L	157	180	1.41	1.57	282.30	0		282.30	250	BU	YES
Gross Alpha	pci/L	48	8.96	1.54	3.00	26.86	0		26.86	15	BU	YES
Gross Beta	pci/L	51	63.8	1.06	2.31	147.47	0		147.47	50	BU	YES
Strontium	pci/L	46	11.4	2.63	4.32	49.29	0		49.29	8	BU	YES
Radium 226 and 228	pci/L	28	2.2	2.31	5.83	12.63	0		12.63	5	BU	YES
Tritium	pci/L	39	106	-3.21	5.61	595	0		595	20000	BU	NO
Nitrate + Nitrite as Nitrogen	mg/L	157	51	2.53	1.84	94	0		94	10	BU	YES
Uranium	pci/L	16	2.75	1.15	4.56	13	0		13	20	BU	NO

TABLE R1

Boeing SSFL
Outfalls 008
(CA0001309, CI-6027)

					CTR CRITERIA				Basin Plan	REASONABLE POTENTIAL ANALYSIS (RPA)							HUMAN HEALTH CALCULATIONS		
					Freshwater		Human Health										Organisns Only		
CTR#	DATE	Units	CV	MEC	C acute = CMC tot	C chronic = CCC tot	Not applicable C hh W&O	C hh O	Title 22 GWR	Lowest C	MEC >= Lowest C	Tier 1 - Need limit?	B>C	Tier 2 - Need limit?	Tier 3 - other info. ?	Tier 3 - need limit?	AMELhh = ECA = C hh O	MDEL/ AMEL multiplier	MDEL hh
1	Antimony	µg/L	0.6	0.38	NONE	NONE	14	4300	6	6.0	No	Go to Tier 2	No	NO	NO	NO	4300	2.01	8627
2	Arsenic	µg/L			340	150	NONE	NONE	10	10.0	No	Go to Tier 2	No	NO	NO	NO	NONE	2.01	
3	Beryllium	µg/L			NONE	NONE	Narrative	Narrative	4	4.0	No	Go to Tier 2	No	NO	NO	NO	Narrative	2.01	
4	Cadmium*	µg/L			4.6	2.4	Narrative	Narrative	5	2.4	No	No	No	No	Yes	Yes	Narrative	2.01	
5a	Chromium III*	µg/L			1741	209	Narrative	Narrative	50	50.0	No	Go to Tier 2	No	Yes	NO	NO	Narrative	2.01	
5b	Chromium VI	µg/L			16.3	11.5	Narrative	Narrative		11.5	No	Go to Tier 2	No	Yes	NO	NO	Narrative	2.01	
6	Copper*	µg/L	0.6	5	13.5	9.4	1300	NONE		9.4	No	Yes	No	Yes	Yes	Yes	NONE	2.0	
7	Lead*	µg/L	0.6	6.3	82.2	3.2	Narrative	Narrative		3.2	YES	Go to Tier 2	No	NO	NO	Yes	Narrative	2.0	
8	Mercury	µg/L	0.6		Reserved	Reserved	0.05	0.051	2	0.05	NO	Yes	No	Yes	Yes	Yes	0.051	2.0	0.10
9	Nickel*	µg/L	0.6	4.3	471	52	610	4600	100	52.16	No	Go to Tier 2	No	NO	NO	NO	4600	2.01	9228
10	Selenium	µg/L	0.6	0.32	Reserved	5	Narrative	Narrative	50	5.00	No	Go to Tier 2	No	NO	Yes	Yes	Narrative	2.01	
11	Silver*	µg/L			4	none	NONE	NONE		4.00	No	Go to Tier 2	No	NO	NO	NO	NONE	2.01	
12	Thallium	µg/L			NONE	NONE	1.7	6.3	2	2.00	No	Go to Tier 2	No	NO	NO	NO	6.3	2.01	13
13	Zinc*	µg/L	0.6	19	122.7	121.7	none	NONE		121.70	No	Go to Tier 2	No	No	Yes	Yes	NONE	2.01	
14	Cyanide	µg/L			22	5.2	700	220,000	200	5.2	No	Go to Tier 2					220000	2.0	441362
16	2,3,7,8-TCDD (Dioxin)	µg/L	0.6	1.13E-08	NONE	NONE	0.000000013	1.4E-08	3x10^-5	1.4E-08	No	No	No	NO	Yes	Yes	0.000000014	2.01	2.81E-08

FOOTNOTE:

* These metals are hardness dependent. CTR criteria was calculated using an average receiving water hardness of 100 mg/L.

Data included extends for December 2007 through December 2008.

TABLE R1

Boeing SSFL
Outfalls 008
(CA0001309, CI-6027)

CTR#	DATE	Units	AQUATIC LIFE CALCULATIONS Freshwater: ECA acute multiplier (p.7)	LTA acute	ECA chronic multiplier	LTA chronic	Lowest LTA	AQUATIC LIFE CALCULATIONS Freshwater: AMEL multiplier (n=4)	AMEL aq.life	MDEL multiplier (n=4)	MDEL aqlife	PROPOSED LIMITS: Lowest AMEL	Lowest MDEL	Recommendation
1	Antimony	µg/L	0.32		0.53			1.6		3.1		--	--	Interim Monitoring - No CTR-based Limit
2	Arsenic	µg/L	0.32	109	0.53	79.1	79.1	1.6	123	3.1	246	--	--	Interim Monitoring - No CTR-based Limit
3	Beryllium	µg/L	0.32		0.53			1.6		3.1		--	--	Interim Monitoring - No CTR-based Limit
4	Cadmium*	µg/L	0.32	1.5	0.53	1.3	1.3	1.6	2	3.1	4	--	3.1	RP Limit Based on CTR/ LA River TMDL
5a	Chromium III*	µg/L	0.32	559	0.53	110.4	110.4	1.6	171	3.1	344	--	--	Interim Monitoring -No CTR based limit
5b	Chromium VI	µg/L	0.32	5	0.53	6.0	5.2	1.6	8	3.1	16	--	--	Interim Monitoring - No CTR-based Limit
6	Copper*	µg/L	0.32	4.3	0.53	4.9	4.3	1.6	6.7	3.1	13.5	--	13.5	Limit Based on CTR
7	Lead*	µg/L	0.32	26.4	0.53	1.7	1.7	1.6	2.6	3.1	5.2	--	5.2	BPJ used to implement Limit
8	Mercury	µg/L	0.32		0.53			1.6		3.1		--	0.10	BPJ used to implement Limit
9	Nickel*	µg/L	0.32	151.2	0.53	27.5	27.5	1.6	43	3.1	86	--	--	Interim Monitoring - No CTR-based limit
10	Selenium	µg/L	0.32		0.53	2.6	2.6	1.6	4.1	3.1	8	--	5	Limit based on LA River TMDL
11	Silver*	µg/L	0.32	1.3	0.53		1.3	1.6	2.0	3.1	4	--	--	Interim Monitoring - No CTR-based Limit
12	Thallium	µg/L	0.32		0.53			1.6		3.1		--	--	Interim Monitoring - No CTR-based Limit
13	Zinc*	µg/L	0.32	39.4	0.53	64.2	39.4	1.6	61	3.1	159	--	159	RP Limit Based on CTR/ LA River TMDL
14	Cyanide	µg/L	0.3	7.1	0.53	2.7	2.7	1.6	4.3	3.1	8.5	--	--	Interim Monitoring - No CTR-based Limit
16	2,3,7,8-TCDD (Dioxin)	µg/L	0.32		0.53			1.6		3.1		--	2.8E-08	BPJ - Limit Based on CTR

FOOTNOTE:

* These metals are hardness dependent. CTR criteria was calculated using an average receiving water hardness of 100 mg/L.

Data included extends for December 2007 thr

Table A3

Reasonable Potential Analysis for Non-Priority Pollutants in Storm water
The Boeing Company
(Santa Susana Field
Outfall 008
(CA0001309, CI-6027)

CONSTITUENT	Units	Number of Samples	Maximum Observed Effluent Concentration	CV	Multiplier	Projected Maximum Effluent Concentration (99/99)	Dilution Ratio	Background Concentration	Projected Maximum Receiving Water Concentration	Water Quality Objectives	BU - Beneficial use protection NC-Human noncarcinogen AP-Aquatic life protection	REASONABLE POTENTIAL
Total Dissolved Solids	mg/L	19	290	0.31	1.60	462.76	0		462.76	950	BU	Yes
Oil and Grease	mg/L	19	12	1.55	5.49	65.90	0		65.90	15	BU	YES
Chloride	mg/L	19	25	0.59	2.30	57.62	0		57.62	150	BU	NO
Sulfate	mg/L	19	21	0.55	2.20	46.29	0		46.29	300	BU	NO
Gross Alpha	pci/L	5	6.07	0.94	7.80	47.34	0		47.34	15	BU	YES
Gross Beta	pci/L	5	23.7	1.03	9.05	214.51	0		214.51	50	BU	YES
Strontium	pci/L	4	0.214	-214.17	9784.35	2093.85	0		2093.85	8	BU	YES
Radium 226 and 228	pci/L	3	0.5	1.21	19.27	9.71	0		9.71	5	BU	YES
Tritium	pci/L	4	-45.9	-0.23	1.90	-87	0		-87	20000	BU	NO
Uranium	pci/L	3	0.682	0.53	4.73	3	0		3	20	BU	NO
Nitrate + Nitrite	mg/L	6	7.7	0.37	2.36	18	0		18	8	BU	YES

TABLE R1

Boeing SSFL
Outfalls 009
(CA0001309, CI-6027)

CTR#	DATE	Units	CV	MEC	CTR CRITERIA: Freshwater C acute = CMC tot	CTR CRITERIA: Freshwater C chronic = CCC tot	CTR CRITERIA: Human Health Not applicable C hh W&O	CTR CRITERIA: Human Health C hh O	Basin Plan Title 22 GWR	REASONABLE POTENTIAL ANALYSIS (RPA) Lowest C	MEC >= Lowest C	Tier 1 - Need limit?	B>C	Tier 2 - Need limit?	Tier 3 - other info. ?	Tier 3 - need limit?	HUMAN HEALTH CALCULATIONS Organisns Only: AMELhh = ECA = C hh O	MDEL/ AMEL multiplier	MDEL hh
1	Antimony	µg/L	0.6	1.6	NONE	NONE	14	4300	6	6.0	No	Go to Tier 2	No	NO	NO	NO	4300	2.01	8627
2	Arsenic	µg/L	0.6		340	150	NONE	NONE	10	10.0	YES	Go to Tier 2	No	NO	NO	NO	NONE	2.01	
3	Beryllium	µg/L	0.6		NONE	NONE	Narrative	Narrative	4	4.0	NO	Go to Tier 2	No	NO	NO	NO	Narrative	2.01	
4	Cadmium*	µg/L	0.60	0.64	4.6	2.4	Narrative	Narrative	5	2.4	No	No	No	No	Yes	Yes	Narrative	2.01	
5a	Chromium III*	µg/L			1741	209	Narrative	Narrative	50	50.0	No	Go to Tier 2	No	Yes	NO	NO	Narrative	2.01	
5b	Chromium VI	µg/L			16.3	11.5	Narrative	Narrative		11.5	No	Go to Tier 2	No	Yes	NO	NO	Narrative	2.01	
6	Copper*	µg/L	0.6	12	13.5	9.4	1300	NONE		9.4	YES	Yes	No	Yes	Yes	Yes	NONE	2.0	
7	Lead*	µg/L	0.6	2.9	82.2	3.2	Narrative	Narrative		3.2	No	Go to Tier 2	No	NO	NO	Yes	Narrative	2.0	
8	Mercury	µg/L	0.6	0.073	Reserved	Reserved	0.05	0.051	2	0.05	YES	Yes	No	Yes	Yes	Yes	0.051	2.0	0.10
9	Nickel*	µg/L	0.6	2.6	471	52	610	4600	100	52.16	No	Go to Tier 2	No	NO	NO	NO	4600	2.01	9228
10	Selenium	µg/L	0.6		Reserved	5	Narrative	Narrative	50	5.00	NO	Go to Tier 2	No	NO	Yes	Yes	Narrative	2.01	
11	Silver*	µg/L			4	none	NONE	NONE		4.00	No	Go to Tier 2	No	NO	NO	NO	NONE	2.01	
12	Thallium	µg/L			NONE	NONE	1.7	6.3	2	2.00	No	Go to Tier 2	No	NO	NO	NO	6.3	2.01	13
13	Zinc*	µg/L			122.7	121.7	none	NONE		121.70	No	Go to Tier 2	No	No	Yes	Yes	NONE	2.01	
14	Cyanide	µg/L			22	5.2	700	220,000	200	5.2	No	Go to Tier 2					220000	2.0	441362
15	Asbestos	Fibers/ L			NONE	NONE	7,000,000	NONE	7x10^6	7x10^6	No	Go to Tier 2	No	NO	NO	NO			
16	2,3,7,8-TCDD (Dioxin)	µg/L	0.6	3.58E-07	NONE	NONE	0.000000013	1.4E-08	3x10^-5	1.4E-08	YES	Yes	No	yes	Yes	Yes	0.000000014	2.01	2.81E-08

FOOTNOTE:

* These metals are hardness dependent. CTR criteria was calculated using an average receiving water hardness of 100 mg/L.

Data included extends for December 2007 through December 2008.

TABLE R1

Boeing SSFL
Outfalls 009
(CA0001309, CI-6027)

CTR#	DATE	Units	AQUATIC LIFE CALCULATIONS Freshwater: ECA acute multiplier (p.7)	LTA acute	ECA chronic multiplier	LTA chronic	Lowest LTA	AQUATIC LIFE CALCULATIONS Freshwater: AMEL multiplier (n=4)	AMEL aq.life	MDEL multiplier (n=4)	MDEL aqlife	PROPOSED LIMITS: Lowest AMEL	Lowest MDEL	Recommendation
1	Antimony	µg/L	0.32		0.53			1.6		3.1		--	--	Interim Monitoring - No CTR-based Limit
2	Arsenic	µg/L	0.32	109	0.53	79.1	79.1	1.6	123	3.1	246	--	--	Interim Monitoring - No CTR-based Limit
3	Beryllium	µg/L	0.32		0.53			1.6		3.1		--	--	Interim Monitoring - No CTR-based Limit
4	Cadmium*	µg/L	0.32	1.5	0.53	1.3	1.3	1.6	2	3.1	4	--	3.1	RP Limit Based on CTR/ LA River TMDL
5a	Chromium III*	µg/L	0.32	559	0.53	110.4	110.4	1.6	171	3.1	344	--	--	Interim Monitoring -No CTR based limit
5b	Chromium VI	µg/L	0.32	5	0.53	6.0	5.2	1.6	8	3.1	16	--	--	Interim Monitoring - No CTR-based Limit
6	Copper*	µg/L	0.32	4.3	0.53	4.9	4.3	1.6	6.7	3.1	13.5	--	13.5	Limit Based on CTR
7	Lead*	µg/L	0.32	26.4	0.53	1.7	1.7	1.6	2.6	3.1	5.2	--	5.2	BPJ used to implement Limit
8	Mercury	µg/L	0.32		0.53			1.6		3.1		--	0.10	BPJ used to implement Limit
9	Nickel*	µg/L	0.32	151.2	0.53	27.5	27.5	1.6	43	3.1	86	--	--	Interim Monitoring - No CTR-based limit
10	Selenium	µg/L	0.32		0.53	2.6	2.6	1.6	4.1	3.1	8	--	5	Limit based on LA River TMDL
11	Silver*	µg/L	0.32	1.3	0.53		1.3	1.6	2.0	3.1	4	--	--	Interim Monitoring - No CTR-based Limit
12	Thallium	µg/L	0.32		0.53			1.6		3.1		--	--	Interim Monitoring - No CTR-based Limit
13	Zinc*	µg/L	0.32	39.4	0.53	64.2	39.4	1.6	61.2	3.1	159	--	159	NO RP Limit Based on LA River TMDL
14	Cyanide	µg/L	0.3	7.1	0.53	2.7	2.7	1.6	4.3	3.1	8.5	--	--	Interim Monitoring - No CTR-based Limit
15	Asbestos	Fibers/ L										--	--	Interim Monitoring - No CTR-based Limit
16	2,3,7,8-TCDD (Dioxin)	µg/L	0.32		0.53			1.6		3.1		--	2.8E-08	Limit Based on CTR

FOOTNOTE:

* These metals are hardness dependent. CTR criteria was calculated using an average receiving water hardness of 100 mg/L.

Data included extends for December 2007 thi

Table A3

Reasonable Potential Analysis for Non-Priority Pollutants in Storm Water
The Boeing Company
(Santa Susana Field
Outfall 009
(CA0001309, CI-6027)

CONSTITUENT	Units	Number of Samples	Maximum Observed Effluent Concentration	CV	Multiplier	Projected Maximum Effluent Concentration (99/99)	Dilution Ratio	Background Concentration	Projected Maximum Receiving Water Concentration	Water Quality Objectives	BU - Beneficial use protection NC-Human noncarcinogen AP-Aquatic life protection	REASONABLE POTENTIAL
Total Dissolved Solids	mg/L	7	140	0.11	1.28	178.59	0		178.59	850	BU	Yes
Oil and Grease	mg/L	7	3.9	0.87	5.52	21.53	0		21.53	15	BU	YES
Chloride	mg/L	7	13	0.33	2.08	27.10	0		27.10	150	BU	NO
Sulfate	mg/L	7	26	0.43	2.54	66.06	0		66.06	250	BU	NO
Gross Alpha	pci/L	6	1.41	0.52	3.28	4.63	0		4.63	15	BU	NO
Gross Beta	pci/L	6	5.5	0.59	3.77	20.74	0		20.74	50	BU	NO
Strontium	pci/L	6	0.5	1.79	18.10	9.05	0		9.05	8	BU	YES
Radium 226 and 228	pci/L	6	1.9	1.80	18.21	34.28	0		34.28	5	BU	YES
Tritium	pci/L	7	210	-7.04	91.73	19263	0		19263	20000	BU	NO
Uranium	pci/L	6	0.107	0.69	4.55	0.486	0		0.49	20	BU	NO
Nitrate + Nitrite	mg/L	7	3.3	0.57	3.35	11.041	0		11.04	10	BU	YES

TABLE R1

Boeing SSFL
Outfalls 011 and 18
(CA0001309, CI-6027)

					CTR CRITERIA				Basin Plan	REASONABLE POTENTIAL ANALYSIS (RPA)							HUMAN HEALTH CALCULATIONS		
					Freshwater		Human Health										Organisns Only		
CTR#	DATE	Units	CV	MEC		C acute = CMC tot	C chronic = CCC tot	Not applicable C hh W&O	C hh O	Title 22 GWR	Lowest C	MEC >= Lowest C	Tier 1 - Need limit?	B>C	Tier 2 - Need limit?	Tier 3 - other info. ?	Tier 3 - need limit?	AMELhh = ECA = C hh O	MDEL/ AMEL multiplier	MDEL hh
1	Antimony	µg/L	0.60	1.3	1.3	NONE	NONE	14	4300	6	6.0	No	Go to Tier 2	No	NO	NO	YES	4300	2.01	
2	Arsenic	µg/L	0.6	4.7	4.7	340	150	NONE	NONE	10	10.0	No	Go to Tier 2	No	NO	NO	YES	NONE	2.00	
3	Beryllium	µg/L	1.0783	0.14	0.14	NONE	NONE	Narrative	Narrative	4	4.0	No	NO	No	NO	NO	YES	Narrative	2.60	
4	Cadmium*	µg/L	0.44	0.25	0.25	4.6	2.4	Narrative	Narrative	5	2.4	No	Go to Tier 2	No	YES	YES	YES	Narrative	1.75	
5a	Chromium III*	µg/L	1.2929	6.5	6.5	1741	209	Narrative	Narrative		209	No	Go to Tier 2	No	NO	NO	NO	Narrative	2.76	
5b	Chromium VI	µg/L	0.6		0	16.3	9.4	Narrative	Narrative	50	9.4	No	Go to Tier 2	No	NO	NO	YES	Narrative	2.01	
6	Copper*	µg/L	0.4	8.9	8.9	13.5	9.4	1300	NONE		9.4	No	Yes	No	YES	YES	YES	NONE	1.6	
7	Lead*	µg/L	1.03	8.8	8.8	82.2	3.2	Narrative	Narrative		3.2	YES	Yes	No	YES	YES	YES	Narrative	2.6	
8	Mercury	µg/L	1.0	0.26	0.26	Reserved	Reserved	0.05	0.051	2	0.05	YES	Yes	No	YES	YES	YES	0.051	2.5	0.13
9	Nickel*	µg/L	0.65	5	5	470.94	52.156469	610	4600	100	52.16	No	Go to Tier 2	No	NO	NO	YES	4600	2.08	9579
10	Selenium	µg/L	0.5363	0.68	0.68	Reserved	5	Narrative	Narrative	50	5.00	No	Go to Tier 2	No	NO	NO	YES	Narrative	1.90	
11	Silver*	µg/L	0.6	0.14	0.14	4	none	NONE	NONE		4.00	No	Go to Tier 2	No	NO	NO	YES	NONE	2.01	
12	Thallium	µg/L	0.6	0.9	0.9	NONE	NONE	1.7	6.3	2	2.00	No	Go to Tier 2	No	NO	NO	YES	6.3	2.01	13
13	Zinc*	µg/L	1.7834	270	270	122.7	121.7	none	NONE		D	No	Go to Tier 2	No	YES	YES	YES	NONE	3.01	
14	Cyanide	µg/L	0.6	3.5	3.5	22	5.2	700	220,000	200	5.2	No	No	No	NO	NO	YES	220000	2.0	441362
16	2,3,7,8-TCDD (Dioxin)	µg/L	0.6	2E-06	2.3E-06	NONE	NONE	1.3E-08	1.4E-08	3x10^-5	1.4E-08	YES	Yes	No	YES	YES	YES	0.000000014	2.01	2.81E-08
19	Benzene	µg/L	0.6	0.38	0.38	NONE	NONE	1.2	71	1	1	No	Go to Tier 2	No	NO	NO	NO		2.01	
30	1,1-Dichloroethylene	µg/L	0.6		0	NONE	NONE	0.057	3.2	6	3.2	No	Go to Tier 2	No	NO	NO	NO	3.2	2.01	6
32	1,3-dichloropropylene	µg/L	0.6		0	NONE	NONE	10	1,700	0.5	0.5	No	Go to Tier 2	No	NO	NO	NO			
43	Trichloroethylene	µg/L	0.6	1	1	NONE	NONE	2.7	81	5	5	No	Go to Tier 2	No	NO	NO	NO	81	2.01	163
53	Pentachlorophenol	µg/L	0.6	0.094	0.094	32.54	24.97	0.28	8.2			No	Go to Tier 2	No	NO	YES	YES	8.2	2.01	16
55	2,4,6-trihlorophenol	µg/L	0.6		0	NONE	NONE	2.1	6.5		6.5	No	Go to Tier 2	No	NO	NO	NO	6.5	2.01	13
56	Acenaphthene	µg/L	0.6		0	NONE	NONE	1200	2,700		2,700	No	Go to Tier 2	No	NO	NO	NO			
68	Bis(2-Ethylhexyl) Phthalate	µg/L	0.6	1.6	1.6	NONE	NONE	1.8	5.9	4	4	No	YES					5.9	2.01	12
70	Butylbenzyl Phthalate	µg/L	0.9835	1.4	1.4	NONE	NONE	3000	5,200		5,200	No	Go to Tier 2	No	NO	NO	NO		2.50	

TABLE R1

Boeing SSFL
Outfalls 011 and 18
(CA0001309, CI-6027)

CTR#	DATE	Units	AQUATIC LIFE CALCULATIONS Freshwater ECA acute multiplier (p.7)	LTA acute	ECA chronic multiplier	LTA chronic	Lowest LTA	AQUATIC LIFE CALCULATIONS Freshwater AMEL multiplier (n=4)	AMEL aq.life	MDEL multiplier (n=4)	MDEL aqlife	PROPOSED LIMITS Lowest AMEL**	Lowest MDEL	Recommendation
1	Antimony	µg/L	0.32		0.53			1.55		3.1		---	6	BPJ used to implement Basin Plan Title 22.
2	Arsenic	µg/L	0.32	110.1	0.53	79.6	79.6	1.55	123.1	3.1	245.7	---	10	BPJ used to implement USEPA MCL Limit based on RP
3	Beryllium	µg/L	0.19		0.35			0.35		5.2		---	4	BPJ used to implement Basin Plan Title 22.
4	Cadmium*	µg/L	0.41	1.9	0.62	1.5	1.5	1.40	2	2.4	3.6	2.0	4	BPJ used to implement CTR criteria.
5a	Chromium III*	µg/L	0.16	283.6	0.30	63.0	63.0	2.22	140.0	6.1	387.0	---	---	Interim Monitoring - No CTR based Limit
5b	Chromium VI	µg/L	0.32	5.2	0.53	4.9	4.9	1.55	8.1	3.1	16.3	8.1	16	BPJ used to implement CTR criteria from previous permit.
6	Copper*	µg/L	0.45	6.1	0.65	6.1	6.1	1.3	7.1	2.2	13.5	7.1	14	Limit Based on CTR. BPJ used to implement CTR criteria .
7	Lead*	µg/L	0.20	16.3	0.36	1.1	1.1	2.0	2.6	5.0	5.2	2.6	5	RP Limit Based on CTR
8	Mercury	µg/L	0.21		0.38			1.9		4.8		0.05	0.128	RP Limit Based on CTR
9	Nickel*	µg/L	0.30	141.2	0.50	26.2	26	1.60	35.0	3.3	96.0	35	96	BPJ limit Based on CTR from previous Order.
10	Selenium	µg/L	0.35		0.56	2.8	2.8	1.49	4.2	2.8	8.2	4	8	BPJ used to implemt CTR criteria.
11	Silver*	µg/L	0.32	1.3	0.53		1.3	1.55	2.0	3.1	4.1	2.0	4	BPJ used to implement CTR.
12	Thallium	µg/L	0.32		0.53			1.55		3.1		---	2	BPJ used to implement Basin Plan Title 22.
13	Zinc*	µg/L	0.13	15.5	0.23	27.5	16	2.63	53.6	7.9	119.0	53.6	119	BPJ used to implement CTR from previous Order.
14	Cyanide	µg/L	0.32	7.1	0.53	2.7	2.7	1.55	4.3	3.1	8.5	4	8.5	RP Limit based on CTR.
16	2,3,7,8-TCDD (Dioxin)	µg/L	0.3		0.53			1.55		3.1		1.4.E-08	2.81E-08	RP Limit Based on CTR
19	Benzene	µg/L	0.3		0.53			1.55				---	---	Interim Monitoring - No Limit
30	1,1-Dichloroethylene	µg/L	0.3		0.53			1.55				3.2	6.0	Interim Monitoring - No Limit
32	1,3-dichloropropylene	µg/L	0.3		0.53			1.55				---	---	Interim Monitoring - No Limit
43	Trichloroethylene	µg/L	0.3		0.53			1.55		3.1		---	5.0	BPJ used to retain previous limit.
53	Pentachlorophenol	µg/L	0.3	10.4	0.53	13.2	10.4	1.55	16.2	3.1	32.5	8.2	16.5	BPJ used to implement limit from previous order.
55	2,4,6-trihlorophenol	µg/L	0.3		0.53			1.55		3.1		6.5	13	BPJ used to retain previous limit.
56	Acenaphthene	µg/L	0.3		0.53			1.55				---	---	Interim Monitoring - No Limit
68	Bis(2-Ethylhexyl) Phthalate	µg/L	0.3		0.38			1.93				---	4	BPJ used to implement Basin Plan Title 22.
70	Butylbenzyl Phthalate	µg/L	0.2		0.53			1.55				---	---	Interim Monitoring - No Limit

TABLE R1

Boeing SSFL
Outfalls 011 and 18
(CA0001309, CI-6027)

					CTR CRITERIA				Basin Plan	REASONABLE POTENTIAL ANALYSIS (RPA)							HUMAN HEALTH CALCULATIONS		
						Freshwater		Human Health										Organisns Only		
CTR#	DATE	Units	CV	MEC		C acute = CMC tot	C chronic = CCC tot	Not applicable C hh W&O	C hh O	Title 22 GWR	Lowest C	MEC >= Lowest C	Tier 1 - Need limit?	B>C	Tier 2 - Need limit?	Tier 3 - other info. ?	Tier 3 - need limit?	AMELhh = ECA = C hh O	MDEL/ AMEL multiplier	MDEL hh
79	Diethyl Phthalate	µg/L	0.6	0.12	0.12	NONE	NONE	23000	120,000		120,000	No	Go to Tier 2	No	NO	NO	NO	120000	2.01	
82	2,4-Dinitrotoluene	µg/L	0.6		0	NONE	NONE	0.11	9.1		9.1	No	Go to Tier 2	No	NO	Yes	Yes	9.1	2.01	18
93	Isophorone	µg/L	0.6	0.16	0.16	NONE	NONE	8.4	600		600	No	Go to Tier 2	No	NO	NO	NO		2.01	
94	Napthalene	µg/L	0.6	0.21	0.21	NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO		2.01	
96	N-Nitrosodimethylamine	µg/L	0.6		0	NONE	NONE	0.00069	8.1		8.1	No	Go to Tier 2	No	NO	NO	NO	8.1	2.01	16
103	alpha-BHC	µg/L	0.6		0	NONE	NONE	0.0039	0.013		0.013	No	Go to Tier 2	No	NO	Yes	Yes	0.013	2.01	0.0261
104	beta-BHC	µg/L	0.6		0	NONE	NONE	0.014	0.046		0.046	No	Go to Tier 2	No	NO	NO	NO			
105	gamma-BHC (aka Lindane)	µg/L	0.6		0	0.95	NONE	0.019	0.063	0.2	0.063	No	Go to Tier 2	No	NO	NO	NO			
106	delta-BHC	µg/L	0.6		0	NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
107	Chlordane	µg/L	0.6		0	2.4	0.0043	0.00057	0.00059		0.00059	No	Go to Tier 2	No	NO	NO	NO			

FOOTNOTE:

* ** Limits are for discharges of stormwater and treated groundwater discharged together.

These metals are hardness dependent. CTR criteria was calculated using an average receiving water hardness of 100 mg/L.

TABLE R1

Boeing SSFL
Outfalls 011 and 18
(CA0001309, CI-6027)

CTR#	DATE	Units	AQUATIC LIFE CALCULATIONS Freshwater ECA acute multiplier (p.7)	LTA acute	ECA chronic multiplier	LTA chronic	Lowest LTA	AQUATIC LIFE CALCULATIONS Freshwater AMEL multiplier (n=4)	AMEL aq.life	MDEL multiplier (n=4)	MDEL aqlife	PROPOSED LIMITS Lowest AMEL**	Lowest MDEL	Recommendation
79	Diethyl Phthalate	µg/L	0.3		0.53			1.55				---	---	Interim Monitoring - No Limit
82	2,4-Dinitrotoluene	µg/L	0.3		0.53			1.55		3.1		9.1	18.3	BPJ used to retain previous limit.
93	Isophorone	µg/L	0.3		0.53			1.55				---	---	Interim Monitoring - No Limit
94	Napthalene	µg/L	0.3		0.53			1.55				---	---	Interim Monitoring - No Limit
96	N-Nitrosodimethylamine	µg/L	0.3		0.53			1.55		3.1		8.1	16.3	BPJ used to retain previous limit.
103	alpha-BHC	µg/L	0.3		0.53			1.55		3.1		0.01	0.03	BPJ used to retain previous limit.
104	beta-BHC	µg/L	0.3		0.53			1.55				---	---	Interim Monitoring - No Limit
105	gamma-BHC (aka Lindane)	µg/L	0.3		0.53			1.55				---	---	Interim Monitoring - No Limit
106	delta-BHC	µg/L	0.3		0.53			1.55				---	---	Interim Monitoring - No Limit
107	Chlordane	µg/L	0.3		0.53			1.55				---	---	Interim Monitoring - No Limit

FOOTNOTE:

* ** Limits are for discharges of stormwater an

These metals are hardness dependent. CTR criteria was calculated using an average receiving water hardness of 100 mg/L.

Table A3

Reasonable Potential Analysis for Non-Priority Pollutants in Storm Water
The Boeing Company
(Santa Susana Field Laboratory)
Outfalls 011 and 018
(CA0001309, CI-6027)

CONSTITUENT	Units	Number of Samples	Maximum Observed Effluent Concentration	CV	Multiplier	Projected Maximum Effluent Concentration (99/99)	Dilution Ratio	Background Concentration	Projected Maximum Receiving Water Concentration	Water Quality Objectives	BU - Beneficial use protection NC-Human noncarcinogen AP-Aquatic life protection	REASONABLE POTENTIAL
Iron	mg/L	4	4.00	0.94	9.26	37.03	0		37.03	0.3	BU	YES
Manganese	mg/L	13	120	0.77	3.41	408.96	0		408.96	50	BU	YES
Barium	mg/L	13	0.05	0.40	2.00	0.09	0		0.09	1	BU	NO
Settleable solids	mg/L	22	0.2	0.56	2.12	0.42	0		0.42	0.3	BU	YES
Total Dissolved Solids	mg/L	22	420	0.34	1.62	679.03	0		679.03	950	BU	NO
Perchlorate	µg/L	22	5.8	1.65	5.25	30.46	0		30.46	6	BU	YES
Total Suspended solids	mg/L	22	230.00	1.35	4.37	1004.77	0		1004.77	45	BU	YES
$BOD_5 20^{\circ}C$	mg/L	46	9.7	0.73	1.95	18.89	0		18.89	30	BU	NO
Oil and Grease	mg/L	22	17	1.90	5.97	101.51	0		101.51	15	BU	YES
Chloride	mg/L	45	84	0.93	2.25	188.89	0		188.89	150.00	BU	YES
Fluoride	mg/L	3	0.31	0.27	2.27	0.70	0		0.70	1.60	BU	NO
Sulfate	mg/L	22	93	0.48	1.92	178.62	0		178.62	300	BU	NO
Gross Alpha	pci/L	5	2.15	1.40	14.80	31.83	0		31.83	15	BU	YES
Gross Beta	pci/L	5	5.59	0.22	1.76	9.86	0		9.86	50	BU	NO
Strontium	pci/L	4	0.235	-40.25	2047.93	481.26	0		481.26	8	BU	YES
Radium 226 and 228	pci/L	2	2.2	1.10	24.75	53.68	0		53.68	5	BU	YES
Tritium	pci/L	4	-28.6	-0.38	2.79	-80	0		-80	20000	BU	NO
Nitrate + Nitrite as Nitrogen	mg/L	22	1.7	0.92	3.09	5	0		5	8	BU	NO
Surfactants	mg/L	45	4.4	2.54	4.29	19	0		19	0.5	BU	YES
Residual Chloride	mg/L	12	0.15	0.56	2.65	0.40	0		0.40	0	BU	YES
Ammonia as Nitrogen	mg/L	45	13	3.04	4.80	62.46	0		62.46	10	BU	YES

TABLE R1

Boeing SSFL
Outfalls 012 - 014
(CA0001309, CI-6027)

					CTR CRITERIA					REASONABLE POTENTIAL ANALYSIS (RPA)							HUMAN HEALTH CALCULATIONS		
					Freshwater		Human Health		Basin Plan								Organisns Only		
CTR#	DATE	Units	CV	MEC	C acute = CMC tot	C chronic = CCC tot	Not applicable C hh W&O	C hh O	Title 22 GWR	Lowest C	MEC >= Lowest C	Tier 1 - Need limit?	B>C	Tier 2 - Need limit?	Tier 3 - other info. ?	Tier 3 - need limit?	AMELhh = ECA = C hh O	MDEL/ AMEL multiplier	MDEL hh
1	Antimony	µg/L	0.6	2.5	NONE	NONE	14	4300	6	6.0	No	Go to Tier 2	No	NO	NO	NO	4300	2.01	8627
4	Cadmium*	µg/L	0.97	5.2	4.6	2.4	Narrative	Narrative	5	2.4	YES	Yes	No	Yes	Yes	Yes	Narrative	2.01	
6	Copper*	µg/L	0.4	5.2	13.5	9.4	1300	NONE		9.4	No	Go to Tier 2	No	NO	Yes	Yes	NONE	2.0	
7	Lead*	µg/L	0.5	2.9	82.2	3.2	Narrative	Narrative		3.2	No	Go to Tier 2	No	NO	NO	Yes	Narrative	2.0	
10	Selenium	µg/L	1.8	1.4	Reserved	5	Narrative	Narrative	50	5.00	No	Go to Tier 2	No	NO	Yes	Yes	Narrative	2.01	
13	Zinc*	µg/L	0.8	160	122.7	121.7	none	NONE		121.70	YES	Go to Tier 2	No	Yes	Yes	Yes	NONE	2.01	
16	2,3,7,8-TCDD (Dioxin)	µg/L	0.6	1.21E-06	NONE	NONE	0.000000013	1.4E-08	3x10^-5	1.4E-08	YES	Yes	No	No	Yes	Yes	0.000000014	2.01	2.81E-08
43	Trichloroethylene	µg/L	0.6	1.40	NONE	NONE	2.7	81	5	5	No	Go to Tier 2	No	NO	NO	NO	81	2.01	1.63E+02

FOOTNOTE:

* These metals are hardness dependent. CTR criteria was calculated using an average receiving water hardness of 100 mg/L.

TABLE R1

Boeing SSFL
Outfalls 012 - 014
(CA0001309, CI-6027)

CTR#	DATE	Units	AQUATIC LIFE CALCULATIONS Freshwater: ECA acute multiplier (p.7)	LTA acute	ECA chronic multiplier	LTA chronic	Lowest LTA	AQUATIC LIFE CALCULATIONS Freshwater: AMEL multiplier (n=4)	AMEL aq.life	MDEL multiplier (n=4)	MDEL aqlife	PROPOSED LIMITS: Lowest AMEL	Lowest MDEL	Recommendation
1	Antimony	µg/L	0.32		0.53			1.6		3.1		--	--	Interim Monitoring - No CTR-based Limit
4	Cadmium*	µg/L	0.32	1.5	0.53	1.3	1.3	1.6	2	3.1	4	--	3.1	RP Limit Based on CTR/ LA River TMDL
6	Copper*	µg/L	0.32	4.3	0.53	4.9	4.3	1.6	6.7	3.1	13.5	--	13.5	Limit Based on CTR
7	Lead*	µg/L	0.32	26.4	0.53	1.7	1.7	1.6	2.6	3.1	5.2	--	5.2	BPJ used to implement Limit
10	Selenium	µg/L	0.32		0.53	2.6	2.6	1.6	4.1	3.1	8	--	5	Limit based on LA River TMDL
13	Zinc*	µg/L	0.32	39.4	0.53	64.2	39.4	1.6	61	3.1	159	--	159	RP Limit Based on CTR/ LA River TMDL
16	2,3,7,8-TCDD (Dioxin)	µg/L	0.32		0.53			1.6		3.1		--	2.8E-08	New Limit Based on CTR
43	Trichloroethylene	µg/L	0.32		0.53			1.6		3.1		--	--	Interim Monitoring - No Limit

FOOTNOTE:
* These metals are hardness dependent. CTR criteria was calculated using an average receiving water hardness of 100 mg/L.

Table A3

Reasonable Potential Analysis for Non-Priority Pollutants in Storm Water
The Boeing Company
(Santa Susana Field Laboratory)
Outfalls 012 through 014
(CA0001309, CI-6027)

CONSTITUENT	Units	Number of Samples	Maximum Observed Effluent Concentration	CV	Multiplier	Projected Maximum Effluent Concentration (99/99)	Dilution Ratio	Background Concentration	Projected Maximum Receiving Water Concentration	Water Quality Objectives	BU - Beneficial use protection NC-Human noncarcinogen AP-Aquatic life protection	REASONABLE POTENTIAL
Total Dissolved Solids	mg/L	13	21	0.83	3.66	76.80	0		76.80	950	BU	NO
Settleable solids	ml/L	13	0.1	0.3	1.58	0.16	0		0.16	0.3	BU	NO
Total Suspended solids	mg/L	13	21.00	0.83	3.66	76.80	0		76.80	45	BU	YES
Total Petroleum Hydrocarbons	mg/L	28	0.095	0.59	2.04	0.19	0		0.19	0.1	BU	YES
Oil and Grease	mg/L	5	3.3	0.37	2.50	8.25	0		8.25	15	BU	NO
Chloride	mg/L	13	810	1.97	9.63	7804.33	0		7804.33	150	BU	YES
Sulfate	mg/L	13	240	2.08	10.20	2447.81	0		2447.81	300	BU	YES
Fluoride	mg/L	13	2	0.86	3.79	7.58	0		7.58	1.6	BU	YES
Nitrate + Nitrite as Nitrogen	mg/L	13	9	1.47	6.85	63.73	0		63.73	8	BU	YES
Nitrate as Nitrogen	mg/L	13	9	1.53	7.18	66.74	0		66.74	8	BU	YES

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

MONITORING AND REPORTING PROGRAM NO. 6027
for
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
(CA0001309)

I. Reporting Requirements

A. The Boeing Company (Discharger) shall implement this monitoring program on the effective date of this Order. All monitoring reports shall be submitted quarterly and must be received by the Regional Board by the dates in the following schedule. All monitoring reports should be addressed to the Regional Board, Attention: Information Technology Unit. The first monitoring report under this Program is due by August 15, 2009.

Reporting Period	Report Due
January – March	May 15
April – June	August 15
July – September	November 15
October – December	February 15

B. If there is no discharge during any reporting period, the report shall so state. The Discharger shall submit an annual summary report (for both dry and wet weather discharges), containing a discussion of the previous year's effluent and receiving water monitoring data, as well as graphical and tabular summaries of the data. The data shall be submitted to the Regional Board on hard copy and CD or electronically. Submitted data must be IBM compatible, preferably using EXCEL software. This annual report is to be received by the Regional Board by March 1 of each year following the calendar year of data collection.

C. Each monitoring report shall contain a separate section titled "Summary of Non-Compliance" which discusses the compliance record and corrective actions taken or planned that may be needed to bring the discharge into full compliance with waste discharge requirements. This section shall clearly list all non-compliance with waste discharge requirements, as well as all excursions of effluent limitations.

Each quarterly report shall contain a separate section titled "Reasonable Potential Analysis" which discusses whether or not reasonable potential was triggered for pollutants which do not have a final effluent limitation in the NPDES permit. This section shall contain the following statement, "The analytical results for this sampling period did/did not trigger reasonable potential." If reasonable potential was triggered, then the following information should be provided:

REVISED TENTATIVE

a. A list of the pollutant(s) that triggered reasonable potential;
b. The Basin Plan or CTR criteria that was exceeded for each given pollutant;
c. The concentration of the pollutant(s);
d. The test method used to analyze the sample; and
e. The data and time of sample collection.

D. The Discharger shall inform the Regional Board well in advance of any proposed construction activity that could potentially affect compliance with applicable requirements.

F. Any mitigation/remedial activity including any pre-discharge treatment conducted at the site must be reported in the quarterly monitoring report.

G. Database Management System – The Regional Board is developing a compliance monitoring database management system that may require the Discharger to submit the monitoring and annual reports electronically when it becomes fully operational.

II. Effluent Monitoring Requirements

A. Sampling station(s) shall be established for the point of discharge and shall be located where representative samples of that effluent can be obtained. Provisions shall be made to enable visual inspection of the discharge. All visual observations shall be included in the monitoring report.

B. This Regional Board shall be notified in writing of any change in the sampling stations once established, or in the methods for determining the quantities of pollutants in the individual waste streams.

C. Pollutants shall be analyzed using the methods described in 40 CFR 136.3, 136.4, and 136.5 (revised March 12, 2007); or where no methods are specified for a given pollutant, methods approved by Regional Board or State Board. Laboratories analyzing monitoring samples shall be certified by the California Department of Public Health and must include quality assurance/quality control (QA/QC) data with their report. For the purpose of monitoring pH, dissolved oxygen, residual chlorine, and temperature, tests may be conducted at the field sampling location provided that all requirements of the approved analytical methods for NPDES use in 40 CFR 136 are met.

The monitoring report shall specify the USEPA analytical method used, the Method Detection Limit (MDL) and the Minimum Level (ML) for each pollutant. For the purpose of reporting compliance with numerical limitations, performance goals, and receiving water limitations, analytical data shall be reported by one of the following methods, as appropriate:

REVISED TENTATIVE

1. An actual numerical value for sample results greater than, or equal to, the ML; or,

2. "Detected, but Not Quantified (DNQ)" if results are greater than or equal to the laboratory's MDL but less than the ML; or,

3. "Not-Detected (ND)" for sample results less than the laboratory's MDL with MDL indicated for the analytical method used.

Current MLs (Attachment T-A) are those published by the State Water Resources Control Board (State Board) in the *Policy for the Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (SIP), February 21, 2005.

D. Where possible, the MLs employed for effluent analyses shall be lower than the permit limits established for a given parameter. If the ML value is not below the effluent limitation, then the lowest ML value and its associated analytical method shall be selected for compliance purposes. At least once a year (in the annual report), the Discharger shall submit a list of the analytical methods employed for each test and associated laboratory quality assurance/quality control (QA/QC) procedures.

The Regional Board, in consultation with the State Board Quality Assurance Program, shall establish a ML that is not contained in Attachment T-A to be included in the Discharger's permit in any of the following situations:

1. When the pollutant under consideration is not included in Attachment T-A;

2. When the Discharger and Regional Board agree to include in the permit a test method that is more sensitive than those specified in 40 CFR 136 (revised May 14, 1999);

3. When the Discharger agrees to use an ML that is lower than that listed in Attachment T-A;

4. When a Discharger demonstrates that the calibration standard matrix is sufficiently different from that used to establish the ML in Attachment T-A and proposes an appropriate ML for their matrix; or,

5. When the Discharger uses a method whose quantification practices are not consistent with the definition of an ML. Examples of such methods are the USEPA-approved Method 1613 for dioxins and furans, Method 1624 for volatile organic substances, and Method 1625 for semi-volatile organic substances. In such cases, the Discharger, the Regional Board, and the State Board shall agree on a lowest quantifiable limit, and that limit will substitute for the ML for reporting and compliance determination purposes.

REVISED TENTATIVE

E. Laboratory analyses – all chemical, bacteriological, and toxicity analyses shall be conducted at a laboratory certified for such analyses by the California Department of Health Services Environmental Laboratory Accreditation Program (ELAP). A copy of the laboratory certification shall be submitted with the Annual Report.

F. Water/wastewater samples must be analyzed within allowable holding time limits as specified in 40 CFR section 136.3. All QA/QC samples must be run as specified by the EPA methodology and the results must be reported in the Regional Board format if available, and submitted with the laboratory reports.

G. All analyses shall be accompanied by the chain of custody, including but not limited to data and time of sampling, sample identification, and name of person who performed sampling, date of analysis, name of person who performed analysis, QA/QC data, method detection limits, analytical methods, copy of laboratory certification, and a perjury statement executed by the person responsible for the laboratory.

H. Quarterly effluent analyses are typically performed during the months of February, May, August and November. Annual effluent analyses shall be performed during the month of February. Due to the intermittent nature and unpredictable frequency of discharges from SSFL, periodic sampling should be conducted during the first opportunity presented during the prescribed monitoring period.

J. In coordination with interested stakeholders in the Calleguas Creek Watershed and within the Los Angeles River Watershed, the Discharger shall conduct instream bioassessment monitoring once a year, during the spring/summer period (unless an alternate sampling period is approved by the Executive Officer). Over time, bioassessment monitoring will provide a measure of the physical condition of the waterbody and the integrity of its biological communities.

1. The bioassessment program shall include an analysis of the community structure of the in stream macroinvertebrate assemblages and physical habitat assessment at the monitoring stations RSW-001U and RSW-002D. This program shall be implemented by appropriately trained staff. Alternatively, a professional subcontractor qualified to conduct bioassessments may be selected to perform the bioassessment work for the Discharger. Analyses of the results of the bioassessment monitoring program, along with photographs of the monitoring site locations taken during sample collection, shall be submitted in the corresponding annual report. If another stakeholder, or interested party in the watershed subcontracts a qualified professional to conduct bioassessment monitoring during the same season and at the same location as specified in the MRP, then the Discharger may, in lieu of duplicative sampling, submit the data, a

report interpreting the data, photographs of the site, and related QA/QC documentation in the corresponding annual report.

2. The Discharger must provide a copy of their Standard Operation Procedures (SOPs) for the Bioassessment Monitoring Program to the Regional Board upon request. The document must contain step-by-step field, laboratory and data entry procedures, as well as, related QA/QC procedures. The SOP must also include specific information about each bioassessment program including: assessment program description, its organization and the responsibilities of all its personnel; assessment project description and objectives; qualifications of all personnel; and the type of training each member has received.

3. Field sampling must conform to the SOP established for the California Stream Bioassessment Procedure (CSBP) or more recently established sampling protocols, such as used by the Surface Water Ambient Monitoring Program (SWAMP). Field crews shall be trained on aspects of the protocol and appropriate safety issues. All field data and sample Chain of Custody (COC) forms must be examined for completion and gross errors. Field inspections shall be planned with random visits and shall be performed by the Discharger or an independent auditor. These visits shall report on all aspects of the field procedure with corrective action occurring immediately.

4. A taxonomic identification laboratory shall process the biological samples that usually consist of subsampling organisms, enumerating and identifying taxonomic groups and entering the information into an electronic format. The Regional Board may require QA/QC documents from the taxonomic laboratories and examine their records regularly. Intra-laboratory QA/QC for subsampling, taxonomic validation and corrective actions shall be conducted and documented. Biological laboratories shall also maintain reference collections, vouchered specimens (the Discharger may request the return of their sample voucher collections) and remnant collections. The laboratory should participate in an (external) laboratory taxonomic validation program at a recommended level of 10% or 20%. External QA/QC may be arranged through the California Department of Fish and Game's Aquatic Bioassessment Laboratory located in Rancho Cordova, California.

5. The Executive Officer of the Regional Board may modify the Monitoring and Reporting Program to accommodate the watershed-wide monitoring.

I. For parameters that both monthly average and daily maximum limits are specified and the monitoring frequency is less than four times a month, the following shall apply. If an analytical result is greater than the monthly average limit, the sampling frequency shall be increased (within one week of receiving the test results) to a minimum of once weekly at equal intervals, until at least four consecutive weekly samples have been obtained, and compliance with the

REVISED TENTATIVE

monthly average limit has been demonstrated.

REVISED TENTATIVE

III. Effluent Monitoring Program

A. The rainfall in inches is recorded at the time the sample is collected. Daily rainfall measurements in inches per day are recorded and reported.

B. The following shall constitute the effluent monitoring program for the final effluent at Discharge Nos. 001, 002, 011, 018, and 019.

Constituent	Units	Type of Sample	Minimum Frequency of Analysis[1]
Total waste flow	gal/day	----	once per discharge event
Temperature	°F	grab	once per discharge event
pH	pH Units	grab	once per discharge event
Rainfall	Inches	continuous	continuous
Hardness as $CaCO_3$	mg/L	composite	annually
Conductivity at 25°C	µmhos/cm	grab	once per discharge event
Total suspended solids	mg/L	composite	once per discharge event
Settleable solids	ml/L	grab	once per discharge event
BOD_5(20°C)	mg/L	composite	once per discharge event
Oil and grease	mg/L	grab	once per discharge event
Turbidity	NTU	composite	once per discharge event
Total residual chlorine	mg/L	grab	annually
Total organic carbon	mg/L	composite	annually
Total dissolved solids	mg/L	composite	once per discharge event
Chloride	mg/L	composite	once per discharge event
Sulfate	mg/L	composite	once per discharge event
Detergents (as MBAS)	mg/L	composite	once per discharge event

[1] During wet weather flow, a discharge event is greater than 0.1 inch of rainfall in a 24-hour period. No more than one sample per week need be obtained during extended periods of rainfall and a storm must be preceded by at least 72 hours of dry weather. Sampling shall be during the first hour of discharge or at the first safe opportunity. The reason for delay shall be included in the report. If the rain event is not sufficient to produce flow from the area, the observation must be documented with date, time condition and rainfall amount. During dry weather flow, whenever Outfalls 001, 002, 011, 018, or 019 is discharging, minimum sampling frequency during operations generating discharges shall be once per month.

© The thirty day average at pH = 7.9 and 20°C, when hourly samples are collected and composited or only one grab sample is collected. The one hour average WLA at 7.9 pH and 20°C, applies if hourly samples are taken throughout the storm and each is analyzed. No single sample may exceed the 10.1 mg/L limit. Analysis for the temperature and pH of the receiving water at the same time as the discharge would provide data for a site-specific determination of the ammonia limit using Attachment H to the WDR. Shall there be no receiving water present, the pH and temperature of the effluent at the monitoring location shall be determined and reported.

Constituent	Units	Type of Sample	Minimum Frequency of Analysis[1]
Nitrate + Nitrate-N	mg/L	composite	once per discharge event
Ammonia-N	mg/L	composite	once per discharge event©
Nitrate-N	mg/L	composite	once per discharge event
Nitrite-N	mg/L	composite	once per discharge event
Cyanide[2]	µg/L	grab	once per discharge event
Copper[2]	µg/L	composite	once per discharge event
Lead[2]	µg/L	composite	once per discharge event
Mercury[2]	µg/L	composite	once per discharge event
1,1-Dichloroethylene	µg/L	grab	once per discharge event
Perchlorate	µg/L	composite	once per discharge event
2,4,6-Trichlorophenol	µg/L	composite	once per discharge event
2,4-Dinitrotoluene	µg/L	composite	once per discharge event
Alpha-BHC	µg/L	composite	once per discharge event
Bis(2-ethylhexyl)phthalate	µg/L	composite	once per discharge event
N-Nitrosodimethylamine	µg/L	composite	once per discharge event
Pentachlorophenol	µg/L	composite	once per discharge event
Trichloroethylene	µg/L	grab	once per discharge event
TCDD♦	µg/L	composite	once per discharge event
Volatile organic compounds	µg/L	grab	once per discharge event♦♦
Boron	mg/L	composite	annually[6]
Fluoride	mg/L	composite	annually[6]
Barium	mg/L	composite	annually[6]
Iron	mg/L	composite	annually[6]
Manganese[2]	µg/L	composite	annually[6]
Antimony[2]	µg/L	composite	annually[6]
Arsenic[2]	µg/L	composite	annually[6]
Beryllium[2]	µg/L	composite	annually[6]
Cadmium[2]	µg/L	composite	once per discharge event
Chromium (VI)[2,3]	µg/L	grab	annually[6]
Nickel[2]	µg/L	composite	annually[6]
Selenium[2]	µg/L	composite	once per discharge event

REVISED TENTATIVE

♦ Analysis must be completed for TCDD and all congeners. After four consecutive samples are reported as nondetect the sampling frequency may be decreased to quarterly. If detected subsequently, the frequency reverts back to once per discharge event.

♦♦ Analyses must include benzene, carbon tetrachloride, chloroform, 1,1-dichloroethane, 1,2-dichloroethane, ethylbenzene, tetrachloroethylene, toluene, xylenes, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichlorofluoromethane, and vinyl chloride. Analyses shall be performed once per discharge event for two years, if all results are nondetect the frequency of monitoring is decreased to quarterly.

[2] Total recoverable results are required.

[3] The Discharger has the option to meet the hexavalent chromium limitations with a total chromium analysis. However, if the total chromium level exceeds the hexavalent chromium limitation, it will be considered a violation unless an analysis has been made for hexavalent chromium in replicate sample and the result is reported within the hexavalent chromium limits.

Constituent	Units	Type of Sample	Minimum Frequency of Analysis[1]
Silver[2]	µg/L	composite	annually[6]
Thallium[2]	µg/L	composite	annually[6]
Zinc[2]	µg/L	composite	once per discharge event
Cobalt	µg/L	composite	annually
Vanadium	µg/L	composite	annually
Radioactivity-			
Gross Alpha	pCi/L	composite	once per discharge event
Gross Beta[4]	pCi/L	composite	once per discharge event
Combined Radium 226 & Radium 228[5]	pCi/L	composite	once per discharge event
Tritium[4]	pCi/L	composite	once per discharge event
Strontium-90[4]	pCi/L	composite	once per discharge event
H-3 (Radioactive Hydrogen) (Tritium)	pCi/L	composite	once per discharge event
K-40 (Potassium-40)	pCi/L	composite	once per discharge event
CS-137	pCi/L	composite	once per discharge event
Uranium	pCi/L	composite	once per discharge event
PCBs	µg/L	composite	annually
TPH[10]	µg/L	grab	annually
Monomethylhydrazine	µg/L	composite	annually
cis-1,2-Dichloroethene	µg/L	grab	annually
1,4-Dioxane	µg/L	composite	annually
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	composite	quarterly
1,2-Dichloro-1,1,2-triflouroethane	µg/L	composite	annually
Cyclohexane	µg/L	grab	annually

REVISED TENTATIVE

[4] Analyze these radiochemicals by the following USEPA testing methods: method 900.0 for gross alpha and gross beta, method 903.0 or 903.1 for radium-226, method 904.0 for radium-228, method 906.0 for tritium, method 908.0 for uranium, method 901.0 or 901.1 for Cesium, and method 905.0 for strontium-90.

[5] Gross alpha and gross beta analysis must be performed. Gross alpha analysis must be <15 pCi/L. If gross alpha is >15 pCi/L, uranium analysis must be performed and must be less than 30 µg/L (20 pCi/L). Radium-228 analysis must be performed, and combined Radium-226 and Ra-228 activity must be < 5pCi/L. Radium 226 analysis can be performed, or if gross alpha is <5 pCi/L, one can assume Ra-226 activity = gross alpha activity for purposes of meeting the 5 pCi/L limit.

Gross Beta, H-3, K-40, and Sr-90 analyses must be performed. The gross beta limit is 15 pCi/L, after subtraction of K-40 activity. The K-40 is assumed to be all natural. H-3 limit is 20,000 pCi/L, and the Sr-90 limit is 8 pCi/L. If gross beta >15 pCi/L (after subtracting K-40 activity) gamma isotopic analysis must be performed for Cs-137 (the most likely emitter associated with the site). The sum of the fractions technique must be used to demonstrate that the gamma emitters don't exceed 4 mrem/year (200 pCi/L for Cs 137). The sum of the fractions must include H-3 and Sr-90. If the limit is exceeded, which is an annual average, the frequency of the sampling is increased to once per discharge event until the annual average is below the specified limit. If the analyses of these constituents demonstrates exceedances, of the annual average effluent limitations (determined at each sampling point) the monitoring frequency is increased to once per discharge until four consecutive analyses demonstrates compliance with the effluent limitations.

[6] If detected concentration exceeds the criteria, the frequency of analysis must be increased to once per discharge. After four consecutive samplings demonstrating compliance the frequency reverts back to annually.

Constituent	Units	Type of Sample	Minimum Frequency of Analysis[1]
Remaining USEPA priority pollutants excluding asbestos[11]	µg/L	composite/ grab for VOCs	annually[6]
Acute toxicity	% survival	composite	annually
Chronic toxicity	TU_c	composite	First and second rain events of each year

C. The following shall constitute the storm water monitoring program for Outfalls 003, through 010.

Constituent	Units	Type of Sample	Minimum Frequency of Analysis[1]
Rainfall	inches	continuous	continuous
pH	pH Units	grab	once per discharge event
Oil and grease	mg/L	grab	once per discharge event
Temperature	°F	grab	once per discharge event
Total dissolved solids	mg/L	composite	once per discharge event
Chloride	mg/L	composite	once per discharge event
Sulfate	mg/L	composite	once per discharge event
Nitrate + Nitrate-N	mg/L	composite	once per discharge event
Ammonia-N (Outfall 008 only)	mg/L	composite	once per discharge event©
Nitrate-N (Outfall 008 only)	mg/L	composite	once per discharge event
Nitrite-N (Outfall 008 only)	mg/L	composite	once per discharge event
Total suspended solids	mg/L	composite	annually
Boron[2]	mg/L	composite	annually[6]
Fluoride	mg/L	composite	annually
Iron	mg/L	composite	annually
Antimony[2]	µg/L	composite	once per discharge event
Cadmium[2]	µg/L	composite	once per discharge event
Copper[2]	µg/L	composite	once per discharge event
Lead[2]	µg/L	composite	once per discharge event
Mercury[2]	µg/L	composite	once per discharge event
Thallium	µg/L	composite	once per discharge event
Selenium (Outfall 008 only)	µg/L	composite	once per discharge event
Zinc (Outfall 008 only)	µg/L	composite	once per discharge event
Vanadium[2]	µg/L	composite	annually
Aluminum[2]	µg/L	composite	annually
TCDD[9]	µg/L	composite	once per discharge event
Perchlorate	µg/L	composite	once per discharge event[7]

[7] Monitor once per discharge at Happy Valley (Outfall 008). Monitor semiannually at all other storm water only

REVISED TENTATIVE

Constituent	Units	Type of Sample	Minimum Frequency of Analysis[1]
Remaining USEPA priority pollutants excluding asbestos[11]	µg/L	composite/ grab for VOCs	annually[6]
Chlorpyrifos	µg/L	composite	annually[6]
Diazinon	µg/L	composite	annually[6]
Radioactivity [5] Gross Alpha Gross Beta	 pCi/L pCi/L	 composite composite	 once per discharge event once per discharge event
Combined Radium 226 & Radium 228[4]	pCi/L	composite	once per discharge event
Tritium[4]	pCi/L	composite	once per discharge event
Strontium-90[4]	pCi/L	composite	once per discharge event
H-3 (Radioactive Hydrogen)	pCi/L	composite	once per discharge event
K-40 (Potassium-40)	pCi/L	composite	once per discharge event
Cs-137	pCi/L	composite	once per discharge event
Uranium	pCi/L	composite	once per discharge event
Hardness as $CaCO_3$	mg/L	composite	annually
Acute toxicity	% survival	composite	annually
Chronic toxicity	TU_c	composite	First and second rain events of each year

D. The following shall constitute the effluent monitoring program from Outfalls 012 through 014.during storm events.

Constituent	Units	Type of Sample	Minimum Frequency of Analysis[1]
Rainfall	inches	continuous	continuous
Hardness as $CaCO_3$	mg/L	composite	annually
pH	pH units	grab	once per discharge event[12]
Temperature	°F	grab	once per discharge event[12]
Suspended solids	mg/L	composite	once per discharge event[12]
BOD_5 20°C	mg/L	composite	once per discharge event[12]
Settleable solids	mg/L	grab	once per discharge event[12]
Oil and grease	mg/L	grab	once per discharge event[12]
Ammonia-N	mg/L	composite	once per discharge event©[12]
Nitrate-N	mg/L	composite	once per discharge event[12]
Nitrite-N	mg/L	composite	once per discharge event[12]
Turbidity	NTU	composite	once per discharge event[12]
Total dissolved solids	mg/L	composite	once per discharge event[12]

outfalls. If the results are nondetect for two years the Discharger may submit a request for the monitoring frequency to be decreased to annually with Executive Officer approval.

REVISED TENTATIVE

Constituent	Units	Type of Sample	Minimum Frequency of Analysis[1]
Total petroleum hydrocarbons[10]	µg/L	grab	once per discharge event[12]
Perchlorate	µg/L	composite	once per discharge event[12]
N-Nitrosodimethylamine	µg/L	composite	once per discharge event[12]
1,4-Dioxane	µg/L	composite	once per discharge event[12]
1,2,3-Trichloropropane	µg/L	grab	once per discharge event[12]
Ethylene dibromide	µg/L	grab	once per discharge event[12]
Methyl tertiary butyl ether (MTBE)	µg/L	grab	once per discharge event[12]
Naphthalene	µg/L	composite	once per discharge event[12]
Di-isopropyl Ether (DIPE)	µg/L	grab	once per discharge event[12]
Tertiary Butyl Alcohol (TBA)	µg/L	grab	once per discharge event[12]
Monomethyl hydrazine**	µg/L	grab	once per discharge event[12]
Chloride	µg/L	composite	once per discharge event[12]
Boron	µg/L	composite	once per discharge event[12]
Sulfate	µg/L	composite	once per discharge event[12]
Fluoride	µg/L	composite	once per discharge event[12]
Nitrate + Nitrite-N	µg/L	composite	once per discharge event[12]
Copper[2]	µg/L	composite	once per discharge event[12]
Lead[2]	µg/L	composite	once per discharge event[12]
Mercury[2]	µg/L	composite	once per discharge event[12]
Cadmium	µg/L	composite	once per discharge event[12]
Selenium	µg/L	composite	once per discharge event[12]
Zinc	µg/L	composite	once per discharge event[12]
TCDD*	µg/L	composite	once per discharge event[12]
Acute toxicity	% survival	composite	annually
Remaining USEPA priority pollutants excluding asbestos[11]	µg/L	composite/ grab for VOCs	annually

REVISED TENTATIVE

[10] Total petroleum hydrocarbons include all fuels, gasoline, and diesel and jet fuel. Analysis should be completed using EPA 8015 (modified) methods.

[11] Analysis shall include xylenes and trichlorofluoromethane. Analysis at Outfalls 008 and 009 shall include asbestos.

** This analysis is completed only for discharges from APTF.

[12] Monitoring shall occur once per discharge event for a minimum of eight discharge events or for each discharge event that occurs from December 20, 2007, through June 10, 2009. If the concentrations of the detected analytes do not exceed water quality based effluent limits established at downstream outfalls, the monitoring frequency may be decreased to annually.

IV. Toxicity Monitoring Requirements

A. Acute Toxicity Monitoring Program

1. The Discharger shall conduct acute toxicity tests on effluent grab samples by methods specified in 40 CFR Part 136 which cites USEPA's *Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms*, Fifth Edition. October 2002 (EPA/821-R-012) or a more recent edition to ensure compliance in 100 % effluent.

2. The fathead minnow, *Pimephales promelas*, shall be used as the test species for fresh water discharges and the topsmelt, *Atherinops affinis*, shall be used as the test species for brackish effluent. The method for topsmelt is found in USEPA's *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, Fourth Edition, October 2002 (EPA/821-R-02-013).

3. In lieu of conducting the standard acute toxicity testing with the fathead minnow, the Discharger may elect to report the results or endpoint from the first 48 hours of the chronic toxicity test as the results of the acute toxicity test.

B. Chronic Toxicity Effluent Monitoring Program

1. The Discharger shall conduct critical life stage chronic toxicity tests on effluent samples (24-hour composite) or receiving water samples in accordance with EPA's Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, October 2002 (EPA/821-R-02-013) or EPA's Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms, Third Edition, October 2002, (EPA/821-R-02-014).

2. Effluent samples shall be collected after all treatment processes and before discharge to the receiving water.

3. Test Species and Methods:

   a. The Discharger shall conduct tests as follows: with a vertebrate, an invertebrate, and an alga for the first three suites of tests. After the screening period, monitoring shall be conducted using the most sensitive species.

   b. Re-screening is required every 15 months. The Discharger shall re-screen with the three species listed above and continue to

monitor with the most sensitive species. If the first suite of re-screening tests demonstrates that the same species is the most sensitive than the re-screening does not need to include more that one suite of tests. If a different species is the most sensitive or if there is ambiguity then the Discharger shall proceed with suites of screening tests for a minimum of three, but not to exceed five suites.

c. The presence of chronic toxicity shall be estimated as specified using West Coast marine organisms according to EPA' s Short-Term Methods for Estimating Chronic Toxicity of Effluent and Receiving Waters to Freshwater Organisms, Fourth Edition, October 2002 (EPA/821-R-02-013).

C. Quality Assurance

1. Concurrent testing with a reference toxicant shall be conducted. Reference toxicant tests shall be conducted using the same test conditions as the effluent toxicity tests (e.g., same test duration, etc).

2. If either the reference toxicant test or effluent test does not meet all test acceptability criteria (TAC) as specified in the test methods manuals (EPA/600/4-91/002 and EPA/821-R-02-013), then the Discharger must re-sample and re-test within 14 days of notification by the laboratory of an invalid test.

3. Control and dilution water shall be receiving water or laboratory water as described in the manual. If the dilution water used is different from the culture water, a second control using culture water shall be used.

D. Accelerated Monitoring

1. If toxicity exceeds the limitations (as defined in Order No. R4-2007-0055, Section I.D.4.a.1. and 1.D.4.b.1), then the Discharger shall immediately implement accelerated testing, as specified at Section I.D.4.a.2 and 1.D.4.b.2. The discharger shall ensure that they receive results of a failing toxicity test within 24 hours of the completion of the test and the additional tests shall begin within 3 business days of receipt of the results or at the first opportunity of discharge. If the accelerated testing shows consistent toxicity, the discharger shall immediately implement the Initial Investigation of the TRE Workplan.

2. If implementation of the initial investigation TRE workplan indicates the source of toxicity (e.g., a temporary plant upset, etc.), then the Discharger may discontinue the TIE.

3. The first step in the initial Investigation TRE Workplan for downstream receiving water toxicity can be a toxicity test protocol designed to determine if the effluent causes or contributes to the measured downstream chronic toxicity. If this first step TRE testing shows that the outfall effluent does not cause or contribute to downstream chronic toxicity, using EPA's Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, October 2002(EPA/821-R-02-013). Then a report on this testing shall be submitted to the Board and the TRE will be considered to be completed. Routine testing in accordance with MRP No. 6027 shall be continued thereafter.

E. Steps in Toxicity Reduction Evaluation (TRE) and Toxicity Identification Evaluation (TIE)

1. Following a TRE trigger, the Discharger shall initiate a TRE in accordance with the facility's initial investigation TRE workplan. At a minimum, the Discharger shall use EPA manuals EPA/600/2-88/070 (industrial) or EPA/833B-99/002 (municipal) as guidance. The Discharger shall expeditiously develop a more detailed TRE workplan for submittal to the Executive Officer within 30 days of the trigger, which will include, but not be limited to:

   a. Further actions to investigate and identify the cause of toxicity;

   b. Actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity;

   c. Standards the Discharger will apply to consider the TRE complete and to return to normal sampling frequency; and,

   d. A schedule for these actions

2. The following is a stepwise approach in conducting the TRE:

   a. Step 1 - Basic data collection. Data collected for the accelerated monitoring requirements may be used to conduct the TRE;

   b. Step 2 - Evaluates optimization of the treatment system operation, facility housekeeping, and the selection and use of in-plant process chemicals;

   c. If Steps 1 and 2 are unsuccessful, Step 3 implements a Toxicity Identification Evaluation (TIE) and employment of all reasonable efforts and using currently available TIE methodologies. The

objective of the TIE is to identify the substance or combination of substances causing the observed toxicity;

d. Assuming successful identification or characterization of the toxicant(s), Step 4 evaluates final effluent treatment options;

e. Step 5 evaluates in-plant treatment options; and,

f. Step 6 consists of confirmation once a toxicity control method has been implemented.

Many recommended TRE elements parallel source control, pollution prevention, and storm water control program best management practices (BMPs). To prevent duplication of efforts, evidence of implementation of these control measures may be sufficient to comply with TRE requirements. By requiring the first steps of a TRE to be accelerated testing and review of the facility's TRE workplan, a TRE may be ended in its early stages. All reasonable steps shall be taken to reduce toxicity to the required level. The TRE may be ended at any stage if monitoring indicates there is no longer toxicity (or six consecutive chronic toxicity results are less than or equal to 1.0 TU_c).

3. The Discharger may initiate a TIE as part of the TRE process to identify the cause(s) of toxicity. The Discharger shall use the EPA acute and chronic manuals, EPA/600/6-91/005F (Phase I)/EPA/600/R-96-054 (for marine), EPA/600/R-92/080 (Phase II), and EPA-600/R-92/081 (Phase III) as guidance.

4. If a TRE/TIE is initiated prior to completion of the accelerated testing schedule required by Part I.C.4.a.2 and Part I.C.4.b.2 of this permit, then the accelerated testing schedule may be terminated, or used as necessary in performing the TRE/TIE, as determined by the Executive Officer.

5. Toxicity tests conducted as part of a TRE/TIE may also be used for compliance, if appropriate.

6. The Board recognizes that toxicity may be episodic and identification of causes of and reduction of sources of toxicity may not be successful in all cases. Consideration of enforcement action by the Board will be based in part on the Discharger's actions and efforts to identify and control or reduce sources of consistent toxicity.

F. Reporting

1. The Discharger shall submit a full report of the toxicity test results,

REVISED TENTATIVE

including any accelerated testing conducted during the month as required by this permit. Test results shall be reported in Toxicity Units (percent survival or TU_c) with the discharge monitoring reports (DMR) for the month in which the test is conducted.

If an initial investigation indicates the source of toxicity and accelerated testing is unnecessary, pursuant to Section IV.C.1., those results shall also be submitted with the DMR for the period in which the Investigation occurred.

2. The full report shall be submitted on or before the end of the month in which the DMR is submitted.

3. The full report shall consist of (1) the results; (2) the dates of sample collection, initiation, and completion of each toxicity tests; (3) the acute toxicity limit or chronic toxicity limit or trigger as described in Order No. R4-2009-00XX sections I.C.4.a.1. and I.C.4.b.1; and (4)printout of the ToxCalc or CETIS program results.

4. Test results for toxicity tests also shall be reported according to the appropriate manual chapter on Report Preparation and shall be attached to the DMR. Routine reporting shall include, at a minimum, as applicable, for each test:

5. sample date(s);

6. test initiation date;

7. test species;

8. end point values for each dilution (e.g., number of young, growth rate, percent survival);

9. NOEC value(s) in percent effluent;

10. IC_{15}, IC_{25}, IC_{40} and IC_{50} values in percent effluent;

11. TU_c values $\left(TU_c = \frac{100}{NOEC}\right)$;

12. Mean percent mortality (±standard deviation) after 96 hours in 100% effluent (if applicable);

13. NOEC and LOEC values for reference toxicant test(s);

14. IC_{25} value for reference toxicant test(s);

15. Any applicable control charts; and

16. Available water quality measurements for each test (e.g., pH, D.O., temperature, conductivity, hardness, salinity, ammonia).

17. The Discharger shall provide a compliance summary, which includes a summary table of toxicity data from at least eleven of the most recent samples.

    The Discharger shall notify, by telephone or electronically, this Regional Board of any toxicity exceedance of the limit or trigger within 24 hours of receipt of the results followed by a written report within 14 calendar days of receipt of the results. The verbal or electronic notification shall include the exceedance and the plan the Discharger will pursue. The written report shall describe actions the Discharger has taken or will take to investigate and correct the cause(s) of toxicity. It may also include a status report on any actions required by the permit, with a schedule for actions not yet completed. If no actions have been taken, the reasons shall be given.

V. Receiving Water Monitoring Requirements

A. Receiving Water Monitoring for TMDL based effluent limitations established for Calleguas Creek and its tributaries and for priority pollutants in both Arroyo Simi and Bell Creek. Monitoring will occur in Arroyo Simi in the area where storm water runoff discharges enters the receiving water and where storm water discharges enter Bell Creek (downstream of the SSFL facility).

Constituent	Units	Type of Sample	Minimum Frequency of Analysis
Water velocity	Ft/second	recorder[8]	quarterly[1,2]
Hardness as $CaCO_3$	mg/L	grab	quarterly[1,2]
pH	pH units	grab	quarterly[1,2]
Temperature	°F	grab	quarterly[1,2]
Chlorpyrifos	µg/L	grab	quarterly[1,2]
Diazinon	µg/L	grab	quarterly[1,2]

[8] The Discharger will use the flow of the process water used for quenching with the time of the test to calculate the total volume of water used.

[9] All seventeen congeners of TCDD must be analyzed as stipulated in State Implementation Policy. After four consecutive samples are reported as nondetect the sampling frequency may be decreased to quarterly. If detected subsequently, the frequency reverts back to once per discharge event.

Constituent	Units	Type of Sample	Minimum Frequency of Analysis
Chlordane	µg/L	grab	quarterly[1,2]
4,4-DDD	µg/L	grab	quarterly[1,2]
4,4-DDE	µg/L	grab	quarterly[1,2]
4,4-DDT	µg/L	grab	quarterly[1,2]
Dieldrin	µg/L	grab	quarterly[1,2]
PCBs	µg/L	grab	quarterly[1,2]
Toxaphene	µg/L	grab	quarterly[1,2]
Priority pollutants	µg/L	grab	once every five years[2,3]

[1] Samples collected quarterly. Compliance is determined by comparing the final concentration to the limits listed in Finding I.C.1. and I.C.2. of Order R4-2009-00XX. The final concentration is the average of the samples collected over one year.

[2] Sampling should occur where discharges from SSFL enter Arroyo Simi.

[3] Sampling should occur where discharges from SSFL enter Bell Creek.

B. The receiving water monitoring program shall include periodic surveys of receiving water and shall include studies of those physical-chemical characteristics of the receiving water that may be impacted by the discharge.

1. Receiving Water Observations. General observations of the receiving water shall be made at each discharge point on a monthly basis and shall be reported in the quarterly monitoring report. If no discharge occurred during the observation period, this shall be reported.

   Observations shall be descriptive where applicable, such that colors, approximate amounts, or types of materials that are apparent. The following observations shall be made where appropriate:

   a. Tidal stage, time, and date of monitoring
   b. Weather conditions
   c. Color of water
   d. Appearance of oil films or grease, or floatable materials
   e. Extent of visible turbidity or color patches
   f. Direction of tidal flow
   g. Description of odor, if any, of the receiving water
   h. Presence and activity of California Least Tern and California Brown Pelican.

VI. Sediment Sampling

The Calleguas Creek OC Pesticides and PCBs TMDL includes requirements for the concentrations of several pesticides and PCBs in sediment. Therefore this permit includes requirements to monitor sediment for these constituents. The Discharger may choose to join the Calleguas Creek Watershed TMDL Monitoring Program (CCWTMP) and collect the required sediment samples along with a host of other stakeholders in the watershed.

This facility is located in Arroyo Simi and the Compliance Sampling Site locations stipulated in the TMDL documentation are Arroyo Simi East of Hitch Boulevard (07_HITCH) or Simi Valley Water Quality Control Plant (07D_SIMI). As an alternative the Discharger may choose to collect the sediment samples at the base of the subwatershed where the discharge occurs. The exact location of the sampling point must be stipulated in the initial self-monitoring report.

The in –stream sediment sampling shall be conducted according to methods developed by the USGS and outlined in *Guidelines for Collecting and Processing Samples of Stream Bed Sediment for Analysis of Trace Elements and Organic Contaminants for the National Water Quality Assessment Program* (1994). A brief description of the protocol also appears in the *Draft Calleguas Creek Watershed Management Plan Quality Assurance Project Plan (QAPP) Monitoring and Reporting Program Plan for Nitrogen, OC and PCBs, and Toxicity Total Maximum Daily Loads* dated September 26, 2006, beginning on page 38. Discussions include field measurements and observations, sample handling and custody, sample handling and shipping, and analytical methods.

Constituent	**Units**	**Type of Sample**	**Minimum Frequency of Analysis**
Sediment toxicity (chronic 10-day eohaustorius estuarius toxicity)	NA	grab	annually
48-hour Bivalve Embryo toxicity (Mytilus edulis or Crassostrea gigas)	NA	grab	annually
Total ammonia	mg/wet kg	grab	annually
% Moisture	%	grab	annually
Particle Size Distribution	um	grab	annually
Total Organic Carbon	% dry weight	grab	annually
Water velocity	ft/sec	grab	annually
pH	pH Units	grab	annually
Temperature	°C	grab	annually
Dissolved Oxygen	mg/L	grab	annually
Conductivity	umhos/cm	grab	annually
Chlordane	ng/g	grab	annually
4,4-DDD	ng/g	grab	annually
4,4-DDE	ng/g	grab	annually
4,4-DDT	ng/g	grab	annually
Dieldrin	ng/g	grab	annually
PCBs	ng/g	grab	annually
Toxaphene	ng/g	grab	annually

REVISED TENTATIVE

VIII. Bioassessment Monitoring

The goals of the bioassessment monitoring for the Arroyo Simi and Los Angeles River are to:

- Determine compliance with receiving water limits;
- Monitor trends in surface water quality;
- Ensure protection of beneficial uses;
- Provide data for modeling contaminants of concern;
- Characterize water quality including seasonal variation of surface waters within the watershed;
- Assess the health of the biological community; and
- Determine mixing dynamics of effluent and receiving waters in the estuary.

Ordered by: _____ Date: May 7, 2009

Tracy J. Egoscue
Executive Officer

/CDO

REVISED TENTATIVE

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

CEASE AND DESIST ORDER NO. R4-2009-00XX

REQUIRING THE BOEING COMPANY, SANTA SUSANA FIELD LABORATORY TO CEASE AND DESIST DISCHARGES OF CONTAMINANT CONCENTRATIONS IN EXCESS OF APPLICABLE WATER QUALITY STANDARDS FROM OUTFALLS 008 AND 009 TO WATERS OF THE UNITED STATES

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) finds:

BACKGROUND

1. The Boeing Company (Permittee), Santa Susana Field Laboratory (SSFL) occupies 2,850 acres and it is located at the top of Woolsey Canyon Road in the Simi Hills, Ventura County, California. SSFL is owned by both the Permittee and the National Aeronautics and Space Administration (NASA). NASA owns 451.2 acres of the property, 41.7 acres in Area I, which includes the area commonly referred to as the former location of the Liquid Oxygen Plant (LOX) and 409.5 acres in Area II. The United States Department of Energy (DOE) leases approximately ninety acres and owns several buildings located in Area IV.

2. The Permittee and its predecessors' operations at SSFL since 1950 included research, development, assembly, disassembly, and testing of rocket engines, and chemical lasers. NASA operations included rocket engine assembly and testing, propellant and fuel storage and loading. DOE conducted past operations in research and development of energy related programs, including nuclear reactors, and seismic testing experiments.

3. Nuclear research and development for DOE and its predecessors was conducted at the SSFL from 1954 – 1989. The activities included developing and operating reactors, and fabricating and disassembling nuclear fuel. The government began to phase out the program in the 1960s. The last reactor was shut down in 1980, and nuclear research was terminated in 1989. Current DOE activities onsite are solely related to facility closure, environmental remediation, and restoration. This research and the associated activities resulted in onsite contamination.

   There are currently no programs at the SSFL which employ special nuclear materials. Current decommissioning activities have reduced the inventory of radioactive waste at the SSFL to approximately 5 curies. Essentially all of this material is stored in shielded vaults located at the Radioactive Materials Handling Facility (RMHF). SSFL continues to utilize radioisotopes in the form of calibration sources which are necessary to calibrate radiation detectors and counting equipment. Three radiological facilities located in Area IV of the SSFL remain to be decommissioned. Storm water run-off from Area IV of the SSFL is monitored for radioactivity. The DOE is responsible for the cost of decontamination and decommissioning, the California Department of Health Services (Radiological Health Branch) has radiological oversight responsibilities at Area IV of the SSFL.

REVISED TENTATIVE

March 11, 2009
Revised: April 6, 2009
Revised: April 22, 2009

4. Historical activities at SSFL that contributed to discharges from the site included rocket engine testing cooling water, operation of fire suppression equipment, and pressure testing of equipment used to support rocket engine testing. Other facility support activities such as cooling, heating, domestic waste treatment, and groundwater treatment also contributed to discharges from the site.

5. During the early 1950s to the mid-1970s, volatile organic compounds were utilized for the cleaning of hardware and rocket engine thrust chambers as well as other equipment. These solvents migrated into the subsurface, contaminating groundwater primarily with trichloroethylene (TCE) and 1, 2-dichloroethylene (1, 2-DCE). There was an extensive groundwater remediation/investigation program in progress at the SSFL, which historically included pumping, treating, and storing groundwater at the facility. This system was composed of eight treatment systems. These systems had the capability of producing up to 578 million gallons of treated groundwater per year. The groundwater was treated to remove volatile, and in some cases semi-volatile, organic compounds. The system was not designed to treat perchlorate or metals. Historically, treated groundwater was discharged directly into one of five water reclamation ponds via naturally occurring streambeds and in some cases man made watercourses present onsite. These treatment systems were regulated under Resource Conservation Recovery Act (RCRA) hazardous waste permits or administrative orders issued by Department of Toxic Substances Control (DTSC), and various air quality control permits issued by Ventura County.

   The groundwater treatment system is being reconfigured. The plan is for one system that will be located in Area 1, near CTL-V. The groundwater from all over the site will be pumped to this location for treatment. After treatment the effluent will be tested and discharged to the streambed at Outfall 019. Outfall 019 is a new compliance point located downstream of Outfall 011 and upstream of Outfall 001. The new groundwater treatment system construction is scheduled to be complete in 2009.

6. SSFL has the potential to discharge a total of approximately 272 million gallons per day (MGD) of storm water runoff and wastewater that has the potential to contain pollutants from the facilities. Approximately 60% of the discharge exits the property via southerly discharge points (Discharge Outfalls 001, 002, 011, and 018) to Bell Creek, a tributary to the Los Angeles River, a navigable water of the United States, with its confluence located near the intersection of Bassett Street and Owensmouth Avenue in Canoga Park, above the estuary.

   The remaining storm water is discharged offsite via Outfalls 003 through 007, 009, and 010 to the northwest toward the Arroyo Simi, a tributary of Calleguas Creek. Discharges from Outfall 008 in Happy Valley flows via Dayton Canyon Creek to Chatsworth Creek. Chatsworth Creek flows south to Bell Creek southwest of the intersection of Shoup Avenue and Sherman Way. Bell Creek subsequently flows southeast to the Los Angeles River.

7. This Order addresses the watershed areas of Outfalls 008 and 009 only.

   - Outfall 008 – This outfall is located in the area commonly referred to as Happy Valley. The entire watershed covers approximately 62 acres. The area receives storm water runoff from the former solid propellant testing area. Operations in the area terminated in 1994. A major component of the propellant was perchlorate. Heavy metals are also associated with these types of operations and they have been detected at concentrations that exceed water quality objectives in storm water exiting the area. Storm water from the area is discharged to Dayton Canyon Creek. The flow from Dayton Canyon Creek joins Chatsworth Creek which flows south to Bell

Creek southwest of the intersection of Shoup Avenue and Sherman Way. Bell Creek subsequently flows east to the Los Angeles River. In September 2004, an interim measure with oversight from the DTSC was implemented in Happy Valley to remove perchlorate contaminated soil. Data collected in the area since the completion of the interim measure demonstrated compliance with the perchlorate effluent limit of 6 µg/L.

- Outfall 009- Outfall 009 begins near the entrance to the property and traverses several potential areas of concern. The entire watershed is approximately 536 acres. It collects storm water runoff from the Area 1 and Area 2 Landfills, and from the former LOX plant, which is located on NASA property. The outfall also picks up storm water runon from Sage Ranch. The Sage Ranch property was previously used for agricultural operations and it includes a gun shooting range. Discharges via this outfall exit the property, enter the American Jewish University/ Brandais Bardin Campus and travels to Arroyo Simi.

Storm water discharges from these outfalls continue to have concentrations of contaminants in excess of water quality based effluent limitations. The Regional Board believes that contaminant source removal actions that target areas which have elevated levels of contaminants will result in compliance with the NPDES permit.

DISCHARGE HISTORY FOR OUTFALLS 008 AND 009

7. On July 1, 2004, the Regional Board adopted Order No. R4-2004-0111 replacing Order No. 98-051, which prescribes waste discharge requirements to the Permittee for the discharge of storm water runoff and wastewater from SSFL. This order added eleven new compliance points including Outfalls 008 and 009 and incorporated requirements based on the California Toxics Rule (CTR).

8. On July 30, 2004, a Petition from Committee to Bridge the Gap for Review of Regional Board Order No R4-2004-0111 was filed. The petition requested a stay of the requirements included in Order R4-2004-0111 to the extent it would remove water quality based effluent limitations for certain metals and volatile organic compounds applicable to seven outfalls at the site. On September 17, 2004, the State Board adopted Order WQO 2004-0014, which denied the petitioners request.

9. Subsequent to the adoption of Order R4-2004-0111, on August 2, 2004, the Permittee filed a petition of the permit with the State Water Resources Control Board. The permittee immediately put the petition in abeyance.

10. On March 14, 2005, the Regional Board issued a NOV to the Permittee for violations of the effluent limitations set forth in Board Order No. R4-2004-0111. The Permittee's effluent exceeded the limitations for Cu, Hg, 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD), and pH during the 4th Quarter 2004. The NOV required submittal of a report detailing the corrective actions taken by the Permittee to achieve compliance with Board Order No. R4-2004-0111.

11. In a letter dated April 14, 2005, the Permittee, in response to the March 14, 2005 NOV, submitted a report detailing corrective actions taken. The Permittee asserted that most of the exceedances are the result of natural causes and/or new constituents, effluent limitations or methodologies in the renewed permit. The Permittee also asserted that they planned to request that the permit be modified to remove permitted discharges that were generated by operations that have been terminated (sewage treatment plants).

12. By a letter to the Regional Board dated July 15, 2005, the Permittee requested that the Regional Board reopen and revise the NPDES permit issued in July 2004 to provide a compliance schedule for all outfalls where the Regional Board adopted more stringent numerical standards or analytical procedures that are different than the previous permit ("1998 permit").

13. On October 7, 2005, the Regional Board issued a NOV to the Permittee for violations of effluent limitations set forth in Board Order No. R4-2004-0111. The Permittee's effluent exceeded the limitations for Hg, TCDD, residual chlorine, oil and grease, sulfate, MBAS, chromium (Cr), iron (Fe), lead (Pb), manganese (Mn), total dissolved solids (TDS), and chronic toxicity from 1st Quarter 2005 through 2nd Quarter 2005. The NOV required a report detailing the corrective actions taken by the Permittee to achieve compliance with Board Order No. R4-2004-0111.

14. In a letter dated November 4, 2005, the Permittee, in response to the October 7, 2005, NOV, again asserted that the permit exceedances were consistent with the presence of naturally occurring constituents in site soils or in ash from area wildfires, rather than a result of site operations. The Permittee asserted that significant upgrades to the Best Management Practices (BMPs), to control runoff and to attempt to bring their discharge into full compliance with the waste discharge requirements had been implemented. However, due to the Topanga Wildfire on September 28, 2005, most of the BMPs were destroyed.

15. On November 22, 2005, pursuant to section 13267 of the California Water Code, the Regional Board issued a letter and directed the Permittee to submit a technical report including a workplan outlining how and when the Permittee proposed to meet the final effluent limitations of Board Order No. R4-2004-0111. The technical report was submitted to the Regional Board on December 16, 2005.

16. On November 30, 2005, a Cleanup and Abatement Order (CAO) No. R4-2005-0077 was issued to the Permittee. The CAO was issued in response to chronic exceedances of effluent limitations contained in Regional Board Order Nos. 98-051 and R4-2004-0111 as well as the increased threat of erosion of soil and ash resulting from the Topanga wildfire. The CAO ordered the Permittee to: (i) initiate a cleanup and abatement program including the implementation of all BMPs necessary to abate impacts of any erosion and ash deposition to navigable waters of the United States; (ii) implement corrective and preventative actions to bring the Permittee's discharge into full compliance with Effluent Limitations and Receiving Water Requirements contained in Regional Board Order No. R4-2004-0111; and (iii) prepare a technical report summarizing the efforts being made to cleanup and abate the condition of pollution.

17. On November 30, 2005, a tentative Order amending Order No. R4-2004-0111 was issued for public comment. The tentative Order would incorporate new effluent limitations based on the reasonable potential analysis of data collected since August 20, 2004, the effective date of Order No. R4-2004-0111. The tentative order was considered at the January 19, 2006, Board Meeting, updated by the Board and adopted as Order R4-2006-0008.

18. On January 24, 2006, a tentative Order, which incorporated updates associated with the metals and nutrients TMDLs for Los Angeles River was issued for public comment. During the March 9, 2006, Board Meeting the item was considered and the proposed amendment adopted as Order No. R4-2006-0036.

19. After the adoption of Order R4-2006-0008 in January 2006, the Permittee petitioned that order, activated the previous petition and petitioned the pending amendment, Order R4-2006-0036. The permittee also requested that the permit be stayed pending a decision on the permit on the basis of merit.

20. On April 3, 2006, there was a State Board Hearing on the Permittee's request for a stay. Order WQ 2006-0002, which was adopted on April 7, 2006, from the State Board stayed effluent limitations for specified constituents at various outfalls. Subsequently, the State Board met en banc. After considering the evidence, the Board adopted Order WQ 2006-0007 on June 21, 2006, which vacated the previous Order and denied the request for a stay.

21. On December 13, 2006, after issuing a draft Order, the State Board held a public hearing to discuss issues related to the petition of the permit on the basis of merit. On that day, Order WQ 2006-0012 was issued by State Board. The Order:

- Remanded the permit to the Regional Board to revise the provisions concerning Outfalls 001, 002, 011, and 018,
- Stayed the effluent limitations at Outfalls 011 and 018 pending a determination by the Regional Board deleting either Outfalls 011 and 018 or Outfalls 001 and 002,
- Directed the Regional Board to issue a Cease and Desist Order (CDO) with the shortest possible compliance schedule and interim effluent limitations, based on the effects of the Topanga Fire. The effective date of the CDO was to be January 19, 2006, and
- Review the permit to ensure that numeric effluent limitations for different outfalls do not count the same violation twice in such a manner as to treat a single violation as multiple violations.

In all other respects, the petitions were denied.

22. On February 21, 2007, the Permittee submitted the first of a number of deliverables with the final document delivered on May 24, 2007, which included a revised ROWD and other supplemental information considered during the update of the permit. The revised permit and a CDO were considered by the Regional Board at the November 1, 2007 Board Meeting.

23. The Regional Board issued Complaint No. R4-2007-0035 for Administrative Civil Liability against the Boeing Company in the amount of $471,190. On August 27, 2007, Boeing waived its right to a hearing and submitted full payment of the civil liability. A Notice of Conclusion of Enforcement Action was issued referencing this case on September 11, 2007.

24. On November 1, 2007, the Regional Board adopted Order R4-2007-0055 which amended the NPDES permit that regulates discharges from the facility. The Order deleted effluent limitations for operations that had been terminated and incorporated findings documenting the Remand.

25. On November 1, 2007, the Department of Toxic Substances Control, issued an Imminent and Substantial Endangerment Determination and Order and Remedial Action Order, Santa Susana Field Laboratory (SSFL) Ventura County, California (CAD 093365435 and CA 1800090010). The Order required the "respondents to undertake removal actions because DTSC has determined that they are necessary to mitigate the release of hazardous substances at or emanating from the Site." Boeing was directed to address two debris fields, one containing asbestos and construction debris and the second associated with the Former Shooting Range which contained elevated

concentrations of polyaromatic hydrocarbons (PAHs) and lead. The cleanup activities are ongoing in the area.

26. Order No R4-2007-0056, a CDO was adopted by this Regional Board at the November 1, 2007, Board Meeting. The CDO included interim effluent limitations for discharges from Outfalls 001 through 011,and 018, in compliance with the requirements included in the Remand issued by the State Water Resources Control Board. The CDO also included requirements for the Discharger to develop and implement engineered natural treatment systems (ENTS) for the watershed areas included in Outfalls 008 and 009.

27. On June 11, 2008, the Regional Board issued a Notice of Violation and Requirement to Submit Information for Violations of Order Nos. R4-2004-0111, R4-2006-008, R4-2006-0036, and R4-2007-0055.

28. On December 3, 2008, the Regional Board issued a Section 13304 Interim/Source Removal Action (ISRA) of Soil in the Areas of Outfalls 008 and 009 Drainage Areas, to the Boeing Company Santa Susana Field Laboratory. Boeing was directed to cleanup the waste that are discharging to waters of the State, minimize impacts to the streambed and to adjacent habitat during the cleanup, protect the water quality during and after the cleanup, and restore the streambed and surrounding habitat following the cleanup.

Compliance with the Section 13304 Order is ongoing. The Discharger submitted a proposed work plan, which would result in compliance with the 13304 Order. The Regional Board has determined that the work plan sets forth an appropriate preliminary schedule, and can feasible by completed by June 26, 2012, which the Board determines is as soon as practicable for compliance with the 13304 Order, and which should result in compliance with water quality standards at Outfalls 008 and 009, in conjunction with the ENTS. This Order should be reconsidered if the Discharger is determined to be out of compliance with the Section 13304 ISRA Order.

EVIDENCE OF CONTAMINATION AND BASIS FOR SECTION 13301 ORDER

29. On July 1, 2004, the Regional Board, adopted Order No. R4-2004-0111 (NPDES Permit No. CA0001309), containing Waste Discharge Requirements for the Boeing Santa Susana Field Laboratory including requirements as follows:

a) "Standard Provision A1: Neither the disposal nor any handling of wastes shall cause pollution or nuisance.."

b) "Standard Provision A2: The discharge shall not cause a violation of any applicable water quality standards for receiving waters adopted by the Regional Board or the State Water Resources Control Board as required by the Federal Clean Water Act and regulations adopted there under...."

c) "Standard Provision B3: The discharger must comply with all of the terms, requirements, and conditions of this order. Any violation of this order constitutes a violation of the Clean Water Act, its regulations and the California Water Code, and is grounds for enforcement action, Order termination, Order revocation and reissuance, denial of an application for reissuance; or a combination thereof."

30. The Permittee, in self-monitoring reports submitted to the Regional Board, has reported violations

of the waste discharge requirements contained in Order No. R4-2004-0111, R4-2006-0008, and R4-2006-0036. The Permittee has been discharging effluent that has chronically exceeded the effluent limitations for TCDD, heavy metals and other pollutants from 1998 through 2008.

CONCLUSION

31. The unauthorized discharge of wastes by the Permittee was not permitted and is in violation of water quality objectives established in the ***1994 Water Quality Control Plan for the Los Angeles Region,*** as amended, and other applicable State and Federal Water Quality Standards.

32. The Permittee has upgraded and implemented a number of new BMPs onsite since the adoption of Order R4-2004-0111. However, discharges from the facility continue to have contaminant concentrations in excess of established effluent limitations even after the implementation of the new BMPs. This indicates that efforts to control the transport of contaminants to waters of the United States have been ineffective.

33. Section 13301 of the California Water Code states, in part, that:

> "When a regional board finds that a discharge of waste is taking place or threatening to take place in violation of requirements or discharge prohibitions prescribed by the regional board or the state board, the board may issue an order to cease and desist and direct that those persons not complying with the requirements or discharge prohibitions (a) comply forthwith, (b) comply in accordance with a time schedule set by the board, or (c) in the event of a threatened violation, take appropriate remedial or preventive action....."

This CDO requires the Permittee to comply with established requirements or prohibitions, to comply with a time schedule, or, if the violation is threatening, to take appropriate remedial or preventative action.

34. 40 CFR part 122.44(l)(1) requires that when a permit is renewed or reissued, interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under §122.62).

35. The data collected since the adoption of Order R4-2006-0008 and R4-2006-0036 provide new information about the discharge including the concentrations of contaminants in the discharge.

Review of the petition by the State Board resulted in a remand of the permit to the Regional Board with a directive to issue a CDO with the shortest possible compliance schedule and interim effluent limitations.

36. During discussions with the Permittee on February 23, 2007, there was a request to treat the discharges from Outfalls 008 and 009 differently from the other storm water only outfalls. Outfalls 008 and 009 are located in jurisdictional drainages where engineered BMP installation may be impractical. Historical data confirms that treatment is required to meet the effluent limitations included in the NPDES permit. The Permittee has proposed a conceptual ENTs design study as the mechanism to meet the final effluent limitations proposed for discharges from these locations. The ENTs will be strategically located to control erosion and sediment from specific source areas, and RCRA RFI Sites throughout the subwatershed. The ENTs include erosion and sediment controls

REVISED TENTATIVE

(such as surface roughening and use of soil binders) and structural treatment devices (such as treatment wetlands and bioretention areas). An independent team of experts was convened to evaluate site conditions including contaminants in the vicinity, evaluate the ENTs, their documented effectiveness and their performance under site conditions, to select the appropriate ENTs, the design and implementation of the ENTs.

37. Interim source removal coupled with the implementation of the ENTs at Outfalls 008 and 009 enhances the Dischargers ability to achieve full compliance with the NPDES permit. Consequently, on December 3, 2008, the Regional Board issued a Section 13304 Order for source removal in the watersheds associated with Outfalls 008 and 009.

38. This CDO provides a time schedule for the implementation of activities associated with the Section 13304 Order. Those activities include the

- selection of areas of source removal,
- evaluation of current data,
- determination of areas requiring additional sampling,
- development of a work plan for sampling,
- comment, response, and approval of the work plan,
- execution of the work plan for data gap analysis,
- permitting,
- delineation of areas affected by soil removal activities,
- alternatives evaluation,
- final work plan to remove soil,
- coordination of efforts for ISRA with efforts to implement ENTS in both watersheds,
- execution of soil removal work plan,
- evaluation of confirmation data from removal action,
- evaluation of effectiveness of ENTs,
- development and implementation of upgrades to ENTs, and
- final report on the ISRA and ENTs implementation.

Based on the number of activities and the complexities of these activities, Regional Board concludes that a three year compliance schedule is the shortest time practicable.

39. This CDO is an action taken for the protection of the environment and, as such, is exempt from the provisions of the California Environmental Quality Act in accordance with California Code of Regulations, title 14, section 15321.

The Regional Board notified Boeing, interested agencies, and parties of its intent to issue a CDO. The Regional Board heard and considered all testimony pertinent to this matter in a public hearing. All Orders referred to above and records of hearings and testimony therein are included herein by reference.

IT IS HEREBY ORDERED that, in accordance with section 13301 of the California Water Code, the Boeing Company shall cease and desist all discharges of contaminants in excess of the effluent limitations stipulated in Order No. R4-2009-00XX and this CDO, by complying with the following:

1. Submit for approval to the Executive Officer by May 1, 2009, Final ISRA Work Plan, as specified in the Section 13304 Order issued by the Regional Board on December 3, 2008. The Work Plan must include a detailed schedule.

REVISED TENTATIVE

2. Compliance for storm water runoff discharges from Outfalls 008 and 009 from June 10, 2009, to June 26, 2012 shall utilize the final effluent limitations that appear in I.B.4. of Order R4-2009-00XX as benchmarks. Exceedance of benchmarks triggers an evaluation of the BMPs in place with the potential for upgrading or replacing the BMPs (see Section II.C.7. of Order R4-2009-00XX).

3. Discharges from Outfalls 008 and 009 after June 26, 2012, shall comply with the final effluent limitations that appear in I.B.4. of Order R4-2009-00XX

4. Submit a report on the results of the ISRA and ENTs implementation by August 31, 2012. The report should include a description of the areas targeted for ISRA, the volume of soil removed, the basis or data used to determine the disposition of excavated soil, the disposition of the excavated soil, and any storm water runoff data collected after completion of the ISRA and/or implementation of ENTs

5. Failure to comply with this Order will result in immediate termination of this Order and implementation of final effluent limitations at Outfalls 008 and 009.

The Permittee shall comply with all other effluent limitations and requirements contained in Order R4-2007-0055 and any subsequent orders.

This CDO is not intended to permit or allow the Permittee to cease any work required by any other order issued by the Regional Board, nor shall it be used as a reason to stop or redirect any investigation or cleanup or remediation programs ordered by the Regional Board or any other agency. Furthermore, this CDO does not exempt the Permittee from compliance with any other laws, regulations, or ordinances which may be applicable, and it leaves unaffected any further restrictions which may be contained in other statutes or required by other agencies.

This CDO does not preclude the Regional Board from taking any enforcement action, including but not limited to complaints for administrative civil liability for the discharge of effluent concentrations exceeding the effluent limitations specified in Order R4-2004-0111, R4-2006-0008, R4-2006-0036, or subsequent Orders.

The action taken by this Regional Board does not preclude the possibility of actions to enforce this CDO by third parties pursuant to Section 505 of the Federal Clean Water Act.

Should Permittee fail to comply with any provision of this CDO, the Executive Officer is authorized to request the Attorney General to take appropriate action against the Permittee, including injunction and civil monetary remedies, pursuant to appropriate California Water Code sections, including but not limited to, sections 13331, 13350, 13385 and 13386.

PREVIOUS ORDER SUPERSEDED

Cease and Desist Order No. R4-2007-0056, adopted by this Regional Board November 1, 2007, is hereby superseded by this Order. .

I, Tracy J. Egoscue, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Los Angeles Region, on May 7, 2009.

_____

Tracy J. Egoscue
Executive Officer

REVISED TENTATIVE